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& Medical
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THE OPHTHALMIC RECORD

EDITED BY

CASEY A. WOOD, M. D.
Chicago
G. C. SAVAGE, M. D.
Nashville
GEO. E. DE SCHWEINITZ, M.D.
Philadelphia
JOHN E. WEEKS, M. D.
New York
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Chicago
H. V. WÜRDEMANN, M. D.
Milwaukee
W. E. HOPKINS, M. D.
San Francisco
HAROLD GIFFORD, M. D.
Omaha

T. A. WOODRUFF, M. D.
EDITORIAL SECRETARY,
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The June number of the OPHTHALMIC RECORD will contain, among others, an original article by Hiram Woods, Jr., M.D., "Ocular Symptoms of Tabes Dorsalis;" one by Francis Valk, M.D., "Cataract Extraction—Valk's Operation;" one by George E. de Schweinitz, M.D., "Partial Optic Nerve Atrophy and Central Scotomas (so-called central amblyopia) Apparently due to Chronic Lead Poisoning."

The RECORD particularly desires short practical papers on any subject connected with Ophthalmology. These will be published at as early a date as possible. It is understood that, unless otherwise arranged, original articles when accepted are contributed to the RECORD exclusively. Illustrative cuts will be made at the expense of the journal and proofs for correction will be sent to authors when desired. Reprints with covers are furnished at cost. One hundred of these will be presented to authors *gratis* when a request for them is written on the original manuscript. The RECORD will be issued monthly and each number will contain about 54 pages of reading matter.

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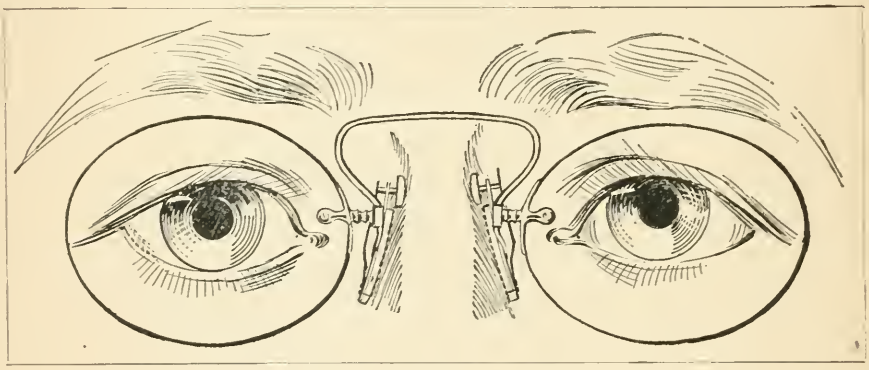

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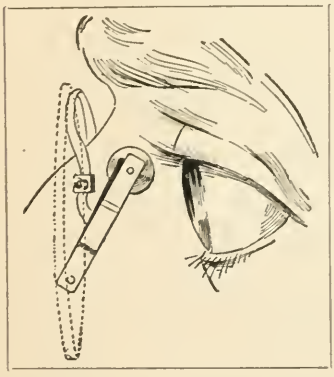

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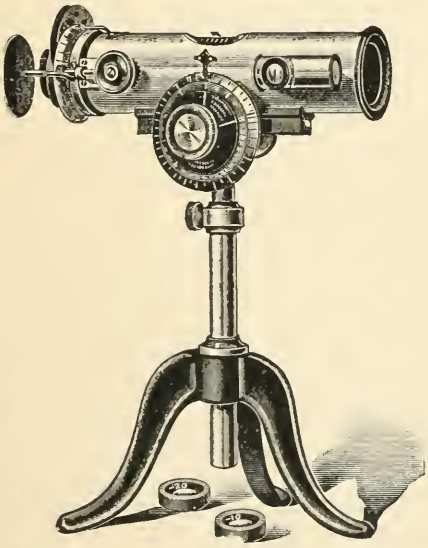

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THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VII. CHICAGO, MAY, 1898. No. 5. NEW SERIES

ORIGINAL ARTICLES.

OPHTHALMOLOGY IN JAPAN.

Abstract from a letter sent to Dr. Charles A. Oliver of Philadelphia by Dr. Wm. N. Whitney of Tokio, Japan, under date of Feb. 4, 1898.

"I took some photographic snapshots a few days since. Here is one of the inside of our hospital waiting-room, taken about 10 A.M.

"I go to the hospital as soon after 8 A.M. as I can get there, and remain until 11:45 A.M., when I come home and get my dinner, and then go by the 1 P.M. train to Yokohama daily, except Saturdays and Sundays. The young man on the front seat of the photograph is Dr. Sonobe, who spent a part of his time in your city. The little girl next to him came in with purulent ophthalmia, which had resulted in staphyloma of the right cornea. I attempted to reduce the staphyloma after the discharge had stopped, but did not succeed until the cornea had given away and the lens in its capsule presented, which was duly incised with a cataract needle and the lens substance removed. The cornea has since collapsed, and the patient appears in a fair way to have a fairly well-shaped eyeball. The boy next to her had an infected elongating marginal ulcer in the left eye, which I succeeded in getting to heal with applications of fifty per cent. strength solution of lactic acid until the ulcer scar did not stain with fluorescein. I then allowed him to go out, but in a few days had him back with swollen lids, a steamy cornea, and a membranous deposit on the lower lid. The membrane was removed with difficulty, and, as I feared it might be a diphtheritic case, I obtained some antitoxin serum and papain, but found it to be a false alarm, although the membrane continued to

form in patches. A deep central ulcer soon appeared, which is now healing.

"A few days ago I saw a young subject in whom a cornea had been cut with a nail nearly across and through sufficiently to allow a part of the lens to escape. I opened the anterior chamber, which was leaking, and removed as much of the opaque and softened lens substance as would come away, including a few drops of vitreous humor which accidentally escaped. The case improved, and I thought I was going to save the eyeball, although he only came to me on the fourth day, after a fifty-mile railroad journey. After improving considerably, however, he had an urgent call to go home, whither he returned much against my advice. Ten days later he returned, with the eye doing fairly well, the pouting corneal wound having rounded off. On the next day, however, pain became intense, and I thought I had a glaucomatous state to deal with, as the eyeball became hard. The capsule of the lens and a corner of the iris had originally caught in the wound, so I made an opening with a small needle and incised the capsular membrane, which divided the anterior chamber into two laterally placed compartments. I also endeavored to relieve the portion of the iris which had been caught in the wound. I succeeded in so doing, but considerable reaction set in, rendering it necessary for me to suggest the removal of the eyeball.

"I had a child who had received a wound from a bamboo dart blown from an air-gun. All I could see was a small hole in the center of the cornea filled with lymph, which later stained with fluorescein. The anterior chamber was gone, and the iris was spread out over the inner surface of the cornea and caught in the corneal wound. The child is under treatment now.

"We have many cases of ulcer of the cornea of all kinds, the majority of which I find I can stop with fifty per cent. strength lactic acid applications made with a fine Japanese brush if seen early enough."

"AUTOPHAKOSCOPY."

BY S. MITCHELL, M.D.

Oculist and Aurist to St. James' Mercy Hospital, Oculist to the Erie Railroad.

HORNELLSVILLE, N. Y.

In No. 1 of Vol. V, of the *Annals of Ophthalmology*, there appears a short article written by me on autophakoscopy, as practiced by the aid of a polished convex surface (a plain gold ring). This article closes with these words: "That, inasmuch as this observation was made in such a peculiar manner, and from rays of light reflected from a convex surface of an opaque substance, there might be in it greater possibilities for some one who possessed the time and inclination to further pursue this interesting subject." Hence it will be seen that I did not then intend to make any further investigations along this line. I am sure I should not have written again upon this theme, were it not for the fact that the phenomenon, the particulars of which I shall presently relate, so frequently and persistently attracted my attention that I have felt impelled to relate my experience. The discovery of this method was brought about by an accident. Nothing more serious, however, than having the right lens of my eyeglasses well sprinkled with some of the fluid with which I was spraying a patient's nose, an accident that has doubtless happened to all when similarly engaged, provided they were wearing glasses at the time.

When looking directly at the arc light on the street corner near my office, through the lens to which small globules of the fluid were clinging, I saw the luminous disc mentioned by Dr. Darier, with great clearness, and of such increased size that all observations were greatly facilitated. These particulars were especially noticeable whenever a little effort was made to bring a large globule in the direct line of vision. The appearance of the physiological floating bodies in the vitreous, as seen by this experiment, is very striking and beautiful. A sudden movement of the eyeball imparts to them a motion like the undulations of a perfectly limpid fluid, like what may be witnessed when alcohol is poured in a glass of clear water when it is held up to the light.

There is a golden tinge to the luminous disc as produced by Dr. Darier's experiment, as well as by the one mentioned in my previous article, that is entirely absent here, so that the outline of all floating

bodies in the vitreous could not be seen any more perfectly if they were under the microscope. The stria in the crystalline lens and the movement of drops of mucus and tears across the surface of the cornea, are not seen by this experiment; it is only possible to watch the movement of the muscæ volitantes. Just why this is so I am unable to explain. To designate this procedure as autophakoscopy is evidently a misnomer, since the stria in the crystalline lens is not seen; this body being one part of the eye that escapes our scrutiny when practicing this method. But for the want of a better name I decided to publish this article under the old title.

The result of several experiments have fully satisfied me that autophakoscopy by this method may be practiced with any lens, provided it is held before the eye in the same position as when used for visual purposes, and is one that in no way interferes with acuteness of vision. A globule of water or colorless liquid albolene, adhering to the outer surface of the lens, is the essential part of the apparatus used in the production of this peculiar phenomenon.

Autophakoscopy, however practiced, does not seem to possess any features that tend to make it of value to the ophthalmologist in clinical work. It does not "fill a long-felt want" as did ophthalmoscopy for our fathers, and as skiascopy and ophthalmometry have done for the modern oculist. It is doubtless destined to occupy about the same position as to usefulness in the realm of science, as is accorded the butterfly in the realm of nature.

SOME NEW METHODS OF EXAMINATION OF THE POSITIONS OF THE VERTICAL MERIDIANS OF THE RETINA

WITH A DESCRIPTION OF A METHOD FOR OPERATIVE CORRECTION IN CASES OF ANOMALOUS DECLINATIONS.

BY GEORGE T. STEVENS, M. D.,

OF NEW YORK.

Illustrated.

Since the introduction of the clinoscope the subject of the position of the vertical meridians of the retina has assumed a new and important place in the examinations of the eyes. We are now in position, as we have never before been, to determine quickly and easily the presence of any leaning of these meridians, either through disease or through physiological causes. The easy and certain detection of such leaning has enabled me to discover the essential element in many cases which

were otherwise obscure and troublesome functional disturbances of the eyes, and to find a remedy. It is the class of cases of leaning from physiological causes which appears to me to be of by far the greatest interest, and I find that the number of such in which the adjustment of the eye muscles is such as to deflect the vertical meridian materially toward one side or the other, thus causing an excessive demand upon the torsional muscles, is much larger than I had expected.

The subject then passes beyond the domain of merely physiological research, to which it seemed to belong, and becomes one of much practical importance.

Recognizing this, I became interested in the search for methods of examination which might become general.

The clinoscope is doubtless more perfectly adapted for these examinations than any other form of instrument which we are likely to possess; but

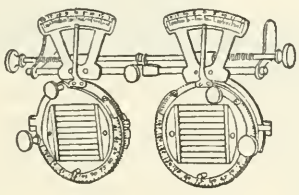

Fig. 1.

it is an instrument which requires space, and which, since several later improvements have been added to it, has become somewhat expensive.

So far as my search has extended, I do not think that any substitute which I am about to describe can take the place of the tubular clinoscope first described and since improved. But at least one of the devices, which I shall presently mention, may be of material service to those who would prefer the use of a simple and comparatively inexpensive instrument to using none at all.

My first experiments in this direction were commenced in September last with a pair of disks, each containing a series of glass rods such as was suggested by Dr. Aiken as a modification of the Maddox rod.

The result was an instrument very interesting, but not very satisfactory. The disks are placed in a frame like the trial frame of the Nachet trial case. It is designed to hang upon the slide of the phorometer, the prisms of which, when placed with their bases in, serve to separate the images seen through the series of rods. A milled head with cogs rotates each disk, and a scale and pointer indicate the extent of rotation. (See Fig. 1.)

The instrument being hung upon the phorometer slide, and the arm of the phorometer being brought to the horizontal position, the image of the

candle flame at the other side of the room is seen as two long streaks of light. The disks are rotated until the streaks are as nearly as possible vertical, and therefore parallel. I have said "as nearly as possible vertical and parallel," for these lines are always curved, and this curvature renders it difficult to determine when they would otherwise be parallel and vertical. A still more important disadvantage is found in the changes in the directions of the lines due to the position of each eye in regard to one of the rods. If, for example, one eye looks through the lower border of a rod and the other through the upper border of another, the position of the lines is quite different from what it would be if both eyes were looking through corresponding parts of two rods in the same horizontal plane. In order to eliminate some of the difficulties, I had small plates of glass cut with a series of prisms, fifteen prisms extending from one side to the other of a plate three-quarters of an inch square, and substituted these plates for the series of rods.

The bending of the streaks of light was somewhat less, but the variations in the positions of the lines were not overcome.

After I had experimented with this instrument for some time, I learned that Doctor E. P. Brewer had had one constructed on the principle of using the double series of rods but with quite different mechanism from that described, and that his instrument antedates my own. I have not seen a description of the Doctor Brewer's device, and do not know whether he has overcome the difficulties which I have encountered. For the purpose of exercising the torsional muscles, this instrument may be used without the prisms of the phorometer. The two lines then unite, and by rotating the disks the effort to hold them in union is drawn forth. Two such disks held in the hands will, however, serve an equally good purpose.

The second device which I have had made appears to be more successful, and it is possible that with some slight modifications it may prove a very satisfactory instrument.

It consists of two oculars, made each in the form of the ocular of the tropometer. Each consists of a magnifying system with a concave and convex lens, and of a glass screen on which is drawn one part of a haploscopic diagram. When seen with the two eyes these parts of the diagram unite as in case of the stereoscope. The lens system can be focused on the diagram so that the latter may be clearly seen by persons with different refractions.

These two oculars are fitted to a frame which is to be placed on the arm of the phorometer (not on the slide). An endless screw causes them to approach or to recede from each other, thus adjusting the two small openings to the pupillary distance of the observer. (See Fig. 2.)

The glass on which the diagram is drawn rotates by means of a cog-wheel, and a pointer indicates, on a scale above, the declination of the diagram.

The necessity of seeing through the two small openings at the same time insures a level for the two eyes, and the strong magnifying property of the oculars makes the lines of the diagram appear of a length which enables the person examined to determine with ease when the lines appear vertical.

There is, in using the instrument, neither convergence nor accommodation demanded, and there would seem to be no theoretical reason why

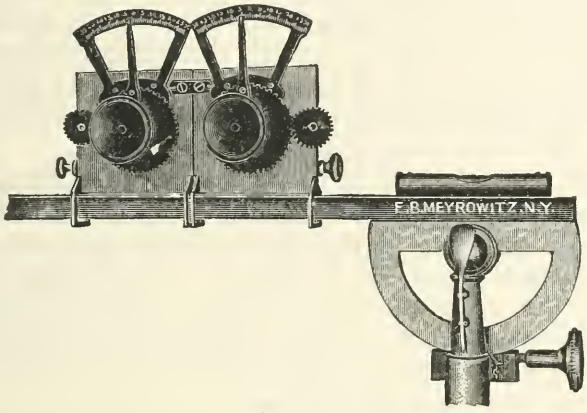

Fig. 2.

there should be a leaning of the lines so long as the line of vision passes through the exact center of the lens. Of course, if the line of sight does not correspond with the axis of the lens system, a declination of the image will be induced.

In using the instrument myself I find a perfect uniformity of results and a correspondence with the results by the clinoscope. Many of my patients also find the same results. There is, however, a certain small proportion, who, although they reach uniform results with the clinoscope do not do so with this, which I may call *the lens clinoscope*. In a new model, now in process of construction, I am endeavoring, with a reasonable hope of success, to remove this difficulty, which probably arises from a false direction of the line of sight.

With slight modification the instrument constitutes a beautifully compact stereoscope, in which pictures of less than one-fourth of an inch in diameter appear of the usual size employed for stereoscopic figures. The two images blend without the aid of a prism such as is necessary in the ordinary form of stereoscope.

OPERATIVE TREATMENT FOR ANOMALOUS DECLINATIONS OF THE VERTICAL MERIDIANS.

I have now to speak briefly of a method of operative correction which I have practiced for rather more than a year, and which I may, therefore, speak of with the benefit of some experience. On the whole, the results have been satisfactory, but the more recent operations have proved especially successful.

The cases operated on have been physiological declinations of a sufficient degree to cause much disturbance. The procedure is as follows: Let it be supposed that the correction is to be made on the right eye for a declination of $+3^\circ$ or $+4^\circ$. In this case the vertical meridian leans with its upper end outwards or towards the right. The object is to bring the upper end towards the center or somewhat to the left, to the extent of making it finally, as nearly as possible, vertical.

A small incision is made by the tenotomy scissors through the conjunctiva over the lower border of the insertion of the internal rectus. The border of the tendon is caught by the small forceps, and is separated from the sclera from the border upwards a few millimeters, depending for extent on the amount of torsion proposed. Care must be observed to preserve the extreme border of the tendon and the relaxation is carried toward or slightly beyond the center. Then a similar relaxation is done on the upper half of the external rectus.

In certain cases the torsion may be affected by traction on the opposite halves of the muscles. After the section as above, but done at the superior part of the internus, the fine sharp hook is introduced through the small opening and passed back between the tendon and sclera where the free border is caught and drawn forward. An extremely fine suture is passed through it, and the two ends are then passed through the conjunctiva in a pocket prepared beforehand, when the border of the tendon is drawn into the pocket and fastened as in my operation for advancement. As the result of this proceeding there will be right hyperphoria and esophoria, or more correctly, right hypertropia and esotropia. A similar operation is then done on the lower border of the external rectus. If the two operations are graduated with sufficient care, the heterotropia caused by the first operation will be so largely neutralized that there will remain a condition of orthophoria, or one so near it that that condition may be expected on the following day.

When healing takes place after either of these procedures there is such a readjustment of the insertions of these two muscles that there is a partial

or complete correction of the leaning of the meridians according as the operation has been more or less exactly graduated.

Such an operation is, of course, one demanding much delicacy of handling, but can be done with the most gratifying success if all the stages are well considered and properly executed.

In cases where an operation for anophoria or for hyperphoria on a superior rectus is to be done, the proceeding is different. In such cases the relaxation of the superior rectus of the eye on which it is desired to induce the torsion is carried to an extent slightly in excess of that which is required, but without freeing either border of the tendon from its attachment to the sclera. Then, introducing the fine hook at the outer third of the tendon, in case the tilting is out, at the inner third if the leaning is negative, the border of the tendon is brought forward, and a suture is inserted and drawn sufficiently to insure a neutralization of the overcorrection of the hyperphoria or anophoria.

In my earlier operations the torsion was done on the superior and inferior rectus in the manner described for the lateral muscles, but I have found the operations on the external and internal rectus more effectual and less difficult.

33 W. Thirty-third street.

A CASE OF TENONITIS.

BY E. C. ELLETT, M. D.

Formerly House Surgeon in the Wills' Eye Hospital, Philadelphia; Ophthalmic and Aural Surgeon to St. Joseph's Hospital and to the Children's Home, Memphis, Tenn.

OF MEMPHIS, TENN.

Illustrated.

On account of the rarity of the condition, I wish to record the following case, which is the second of the kind that I have seen:

On May 1, 1897, I was asked by Dr. Farrington to see a colored girl in the city hospital, for an eye trouble. She was sixteen years old, and gave the following history: Four weeks previously she had had a chill, followed by a rise of temperature, and two days later the right eye protruded. In a few days more the left eye became similarly affected. She was seen by several physicians and variously treated according to the different diagnosis each made, until Dr. Farrington was called, and had her brought to the hospital.

I found marked exophthalmos, affecting both eyes, with a fold of œdematous conjunctiva protruding from the lower portion of each ball, overhanging the lower lids, and preventing closure of the lids. The conjunctivæ were injected, and there was a very moderate muco-purulent discharge. The condition was most marked in the left eye, and in this eye the lower third of the cornea was

infiltrated, no doubt from exposure and "strangulation." The motion of the eyes was somewhat limited; there was no ocular pain, but some photophobia and a good deal of pain in the top of the head. The temperature was a little elevated, running from 99 to 100; otherwise the general condition was good. I was unable to obtain a view of the eye grounds, as there were no facilities at the hospital for ophthalmoscopic work, and the condition of the eyes made it very difficult. There was a good reflex, movable pupils, and as far as I could determine, no impairment of vision.

I was considerably puzzled to make out the diagnosis. The sudden onset of the trouble pointed to an inflammatory process, and my first thought was of double ethmoiditis, having ruptured through the os planum and forming a collection of pus behind each eyeball. The rise of temperature favored this view. There were no intranasal evidences of ethmoidal disease, but nevertheless I had the patient anesthetized on May 4th, and made a small opening at the upper and inner corner of each orbit, to the periosteum, and, keeping underneath this membrane, passed a probe back to the os planum. The result was negative on both sides, and this condition being eliminated, I came to the conclusion that the case was one of double tenonitis. I ordered hot compresses, and fifteen grains of salicylate of soda every two hours. This was continued with marked benefit till the 10th, when, on account of nausea and tinnitus the salicylate was given every four hours, and the hot compresses stopped. The exophthalmos, chemosis and injection, was much better. The cornea did not ulcerate, but an opacity remained at the seat of the infiltration. She was subsequently put on the iodide of potash, with a return to the salicylates for a few days on account of pain in the head. She was dismissed on June 1st, the right eye being well, the left still showing a small roll of hypertrophic conjunctiva below the cornea. I noticed considerable pigmentation of the conjunctiva, but this is quite common in the negroes and mulattoes, and probably antedated the disease. The eye-ground at this time showed nothing abnormal.

The appended cut illustrates very well the appearance when the patient was on the road to recovery, and was made for me by my friend, Dr. Alfred Moore.

These cases are very rare, and are usually, as was probably the case in this instance, due to a rheumatic diathesis. A few cases are reported in literature, but the clinical history of this case covers most of the points usually noted.

Mazza (*Revue generale d' ophthalmologie*, October 31, 1894) has recorded six cases, in all of which the conjunctival swelling was marked below the cornea. He thinks free incisions are necessary on account of danger to the nerve from pressure by the effusion.

Burnett (*Archives of Ophthalmology*, January, 1894) reported a case in a healthy girl of eleven, accompanied by serous retinitis. Puncture through the lids allowed the escape of some bloody serum and was followed by recovery.

Continental Building.

Dr. E. C. Ellett's Case of Tenonitis.

BILATERAL ABDUCENS PARALYSIS.*

BY WILLIAM A. FISHER, M.D.,

OF CHICAGO,

Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College; Attending Surgeon, Illinois Charitable Eye and Ear Infirmary.

Illustrated.

I present a case of bilateral abducens paralysis, not as a common one, but as one of most infrequent occurrence. There is present not only paralysis of both abducens, but as much contraction as is possible, not only of the muscles that turn the eye inward, but of all the ocular tissues toward the nasal side. I would hesitate to present to this society an ordinary case of unilateral abducens paralysis, for you all know how frequently such cases occur. In fact, I am rarely without such a case. At this writing there are three patients in my clinics, all having a specific history. This particular case is given because it shows what a great deformity can follow paralysis of this kind.

Mrs. B., aged fifty, married thirty years. Five children, three living and in good health; one died of measles and one of croup. Father died at the age of seventy; mother died at the age of seventy-five. She has had three brothers; one died in the army in India; has not heard from other two for ten years, when they were in good health. Six sisters; two died in infancy; others in perfect health. Thirty-seven years ago, or when she was thirteen, her left eye began to turn in. Previous to that time she was not aware of having any eye trouble. She consulted a physician in Ireland, and was told her eye could be straightened by an operation. About twenty years ago, or seventeen years after the left eye turned in, her right eye began to turn. Six years ago she had the la grippe, and since that time her eyes have grown rapidly worse. Last two years they have been about as we now find them. The patient has been a hardworking woman all her life, doing washing and carrying heavy baskets of clothes on her head. She is now in, and has always enjoyed, good health. Vision sufficient to enable her to get around where she is well acquainted. Tension normal. The eyes were rotated so far inward that both pupils were hidden in the inner canthi. It was impossible to rotate either eye out under cocain anesthesia. Not being able to get an ophthalmoscopic view, and knowing there could be no harm in an attempt toward straightening, and possibly some good result, the patient was anesthetized with chloroform, and an effort was made to rotate the right eye out, and sever the offending tissues. It was found impossible, however, to rotate the eye outward to any extent, whereupon an attempt was made to sever the internal

* Read before the Western Ophthalmologic and Otolaryngologic Society, April, 1898.

rectus. Not only was it necessary to sever the muscles that rotate the eye inward, but it amounted to a dissection of all the ocular tissues toward the nasal side. The eye was fixed as firmly as in a case of panophthalmitis, and there were adhesions everywhere. A slight improvement was produced, notwithstanding, which lasted a few days; the pupil was free from the inner canthus, but there was no improvement in vision. Since the operation, contraction has taken place, and the eye is at present in about the same condition I found it. The patient has never complained of pain in the eyes, and gives no history of any inflammatory condition, but we have adhesions which could not have been produced by inflammation without the patient being conscious of it.

Hutchinson reports seventeen very interesting cases of ophthalmoplegia externa (*Royal Medical and Chirurgical Society of London*, 1879). In summing up he was certain that syphilis had been the cause in ten of the seventeen cases, and that in the remaining seven a reasonable suspicion of syphilis might be entertained in several. He further held that, with such a fact in mind, it was almost impossible to make the negative even fairly possible. The evidence which connects this affection (ophthalmoplegia externa) with syphilis is exceedingly strong, and the theory that it can occur independently of it must be regarded as open to some doubt.

The cause of paralysis in the particular case I have cited, however, is obscure. We can exclude some of the common causes in theorizing and diagnosing, but syphilis should not be excluded, even if we have a negative history, as in this case. As syphilis is given as the cause of nearly all these paralyses, I have given my patient increasing doses of potassium iodide, and will continue the treatment for a reasonable time. It would be no more than fair, in my opinion, to suppose the lesion in this case was caused by la grippe.

THIOSINAMINE—A CLINICAL CONTRIBUTION TO ITS STUDY.

BY GEORGE F. SUKER, M.D.

OF TOLEDO, OHIO.

Recently rather much has been written upon the use of thiosinamine —not so much in this country as abroad. However, so far every article that has appeared in the various journals has been of more interest to our fellow practitioner than to the ophthalmologist. Though several (Tousey & Newton) do make mention of the employment of thiosinamine in aural and ophthalmic practice, yet no extended report of such a study has been noticed in an ophthalmological journal. It is for this

Bilateral Abducens Paralysis.

reason that the writer invites your attention to the question of thiosinamine.

Though thiosinamine has just recently been extensively used, it is by no means a late chemical production. We find an accurate description of it in many works on organic chemistry—Berzelius (1828) and Strecker (1857). Though it is obtained from our every-day common household remedy, mustard-seed oil, yet it never was used in the practice of medicine until in 1892. Hebra was the first to report on its therapeutical application (*vide* Trans. sec. internat. Cong. of Dermat., Vienna, 1892). He experimented with it in lupus and tuberculosis; in the former he achieved good success, while in the latter, none at all. Hebra and Van Horn made a complete physiological, as well as a bacteriological study of it.

From the studies of Hebra, Keitel, Van Hoorn, Richter, and Sedziak, it remained for Tousey of New York to make the discovery of its almost specific action in keloids (*N. Y. Med. Jour.*, May '96, and November, '97). Tousey was the first to note its softening and relaxing influences upon old cicatrices.

When given in doses varying from ½ grain to 3 or 5 grains, once daily, it acts as a mild tonic, stimulates the appetite and increases urination. After the injection of a 15% alcoholic solution (15mm.), a breaking down of the leucocytes takes place and a reduction of one-third results, which lasts for about four hours, followed by a very active increase in number. Richter maintains that as far as its action on the blood is concerned, thiosinamine belongs to the same category of drugs as hamialbumose, sodium urate, urea, tuberculin, pepsin, peptone, and the like. The actual cause of this breaking down of the leucocytes is yet a mooted question.

It is an active diuretic and hastens the absorption of effete material. The excessive diuresis continues only for a few days. Richter thinks this is a therapeutical action, which is discontinued after the abnormal fluids have been eliminated. However, this has not been the writer's experience, though the excessive diuresis ceases after several days; still the quantity of urine remains increased as long as the drug is administered.

The long continued administration of the maximum doses (6 to 10 grs.) will cause nausea, violent headaches, and excessive malaise. No better results are achieved or a more rapid improvement of the patient obtained by prescribing the large doses. However, none of the symptoms that supervene after the administration are in any way detrimental to the patient.

When thiosinamine was first used for the treatment of tubercular affections, it was given hypodermatically in a 15% alcoholic solution. The dose was from ½ to 1 grain twice a week, and gradually increased until 3 grains were given.

DuClaux, of Paris, recommends a 10% solution of equal quantities of water and glycerine as follows: Thiosinamine, 0.5; glycerinæ —; aquæ, aa 25.00.

This given subcutaneously is not nearly as painful as the alcoholic solution. 12 to 18 mm. are given three times a week. This latter solution keeps just as long as the alcoholic one. Nevertheless it is well to keep any solution of it in a dark and well corked bottle.

However, thiosinamine given internally in doses of 3 grains daily is as good as the subcutaneous medication. In giving it by the stomach, care must be taken not to give more than 1 grain a day in divided doses, gradually increasing the same from day to day until 3 grains are taken. The object of this is to avoid any nausea. It has been the writer's experience that if ½ grain is given night and morning for several days and then the dose gradually increased by ¼ grain per day, the disagreeable stomachic symptoms are entirely avoided. It is best given directly after the morning's meal. Never give a dose in the latter half of the day or at bedtime, as it surely will cause the excessive dreaming which is so very annoying. The best method of dispensing thiosinamine is in capsule form. The pill form is not at all desirable.

It seems to be customary to discontinue the administration of thiosinamine after it has been taken for six or eight weeks, for a period of ten to fourteen days. After the lapse of this time, the regular dose of 3 grains is again instituted. The writer has done this in some cases, but the following method, in the majority of cases, seems to give better results. Instead of withdrawing the drug entirely for that period, he gives it in ¼ to ½ grain doses for that period, and then resumes the full dose of 3 grains. So far no idiosyncrasies have been noticed in the patients who have taken thiosinamine.

The following is a clinical report of a number of cases occurring in the writer's experience. The class of cases in which it was employed were: Corneal opacities, catarrhal deafness, and chorioiditis exudativa. It was given in a sufficient number of cases to warrant the statement that thiosinamine is truly worthy of an extensive trial in like cases.

Before entering into the details of the cases, permit the following statement. So far, the two cited cases of chorioiditis exudativa are the first of their kind reported in which thiosinamine has been the only

remedy administered. A careful search in the literature upon thiosinamine was made, and no mention of its use in chorioiditis was found.

Mr. H. H., æt. 40 years. Laboring man. Family and personal history good; absolutely no specificity. Ten years ago while blasting met with severe injuries about the head—resulting in the loss of the left eye—extensive cicatricial contraction of the right cheek, in consequence quite a marked ectropion of the lower lid of the right eye (not interfering with the welfare of the eye). Since then he has had a pterygium removed from the right eye. This left a dense leucoma in the cornea—not impinging upon the pupillary area. The leucoma was not even translucent, so dense. In the latter part of 1896, he began to notice a slight failing in the sight of the right eye. This gradually grew worse, so that in about six months he was unable to follow his vocation. He first came under my charge in the latter part of 1897. The following is the condition of the right eye:

O. D. V.=20/200, with a—2.00 cyl. ax. 180°=20/120.

The field of vision is a trifle contracted on account of the leucoma above mentioned. Pupillary reaction normal. Vision a trifle better after sundown. No iridic adhesions were present. The ophthalmoscope revealed a beautiful picture of exudativa choroiditis disseminata. The optic nerve entrance was indistinctly seen, showing evidences of its secondary atrophy, especially on the nasal side. There were distinct evidences of an optic neuritis.

The opacities in the vitreous were somewhat numerous. On the posterior capsule, toward its periphery, were several dense linear opacities extending in an oblique direction. Toward the center of the same capsule there was a cluster of six opaque spots, each individual spot no larger than a pinhead.

In other respects the eye did not differ from the usual picture of choroiditis exudativa. The patient had never taken any treatment for his eye trouble.

He was given 3 grains of thiosinamine as a daily dose, beginning November 1, 1897, and weekly notes of the condition were recorded.

The first change was noticed on November 28, 1897. The patient noticed a decided improvement in vision after sundown, i. e., the outlines of objects were more sharply cut. His vision with a —2.00 cyl. ax. 180°=20/80, while without, 20/120. This, we see, is a decided improvement in so short a time. No other changes were noted.

December 11th, vision equaled 20/80 without any correction, but with a +1.00⊂—2.00 cyl. ax. 150° vision equaled 20/60. The leucoma showed evidences of transparency. It originally was a very dense glistening white opacity. Then, too, capsular opacities, instead of giving that intense black hue, were almost transparent. Still, the fundus did not show as much of a change as the capsule and corneal opacity. The outlines of the optic nerve entrance are now distinctly discerned where heretofore it was impossible.

On December 30, 1897, vision equaled 20/60 without any correction, but with the above 20/40. This time the leucoma is considerably smaller, and not so dense. For, through its center one can obtain a faint fundus reflex with the ophthalmoscope. The vitreous opacities are less numerous and not so dense. The linear capsular opacities are completely translucent in the center and their edges transparent. The little cluster is decidedly gray and not black. Retina, choroid and nerve-head present the same appearance as on December 11th. The

patient says he can see "remarkably well." The facial cicatrices are decidedly relaxing and the ectropion rapidly disappearing.

February 2, 1898. There is no improvement in the vision. The leucoma is transparent throughout its extent.

February 16, 1898. Vision is 20/40, a trifle minus; with a $+ 1.00 \frown - 2.00$ cyl. ax. $150° = 20/30$, i. e., he can read two or three letters in this line correctly. The nerve-head does not present that atrophic appearance first spoken of. The field of vision is not materially changed. Though the whole fundus is greatly improved, yet the improvement does not correspond with the decided gain in the acuity of vision.

March 3, 1898. The condition has not changed sufficiently to speak definitely since February 16, 1898. The patient is still taking thiosinamine.

In the other case of exudativa chorioiditis the lesion was not so extensive, less reduction in the acuity of vision and no complications. In this case, the vision before treatment equaled 20/80 and was raised from that to 20/40 within four months. No correction required to obtain this acuity. In both cases the exudative period of this disease had not passed off entirely.

Though a goodly share of our chorioiditis cases have a specific history, yet undoubtedly many are due to other causes, such as malnutrition, local ocular disturbances, secondary in their nature, and others—shall we say idiopathic? In the above cases malnutrition is considered the cause.

Though the prognosis of chronic chorioiditis exudativa disseminata is unfavorable on account of the danger of the continuance of the disease, yet the writer sincerely maintains that a great deal may be accomplished if thiosinamine is used in such cases where the exudative stage has not entirely passed away. While the prognosis in the acute variety of the disease is rather favorable as to the outcome, yet relapses are to be feared. Such relapses endanger the patient very materially, and in these acute cases thiosinamine is bound to accomplish more, and that, too, permanent, than any other line of treatment. The thiosinamine is given on account of the fibrous and cicatricial changes which invariably take place in any form of exudative chorioiditis. That this hypothesis is correct can be seen from the results obtained.

The next case is one of corneal opacity:

Mr. M. H., æt. 41 years. Twenty years ago had an attack of chronic trachoma in each eye. The corneæ were not affected at the time. Since the last four or five years has been subject to pinhead ulcers of the corneæ. In the right eye these little ulcers during one attack became confluent and produced a large central corneal ulcer, leaving an extensive opacity. The left eye had several large marginal corneal ulcers. Both corneæ were studded with minute areas of opacity. The trachoma cannot alone be held responsible for the corneal opaci-

ties, as he has had trichiasis for a number of years, hence a constant corneal irritation. The trichiasis was nicely removed by operative measures before treatment was begun. The vision, before the treatment with thiosinamine was instituted, was on November 1, 1897, as follows: O. D. V.=20/200, O. S. V.=20/120. No correction of any kind would raise the acuity. However, by placing a stenopæic slit at an angle of 75 degrees in the left eye and 105 degrees in the right, the vision was raised to 20/80 and 20/120, respectively. No lens, in addition to the slit, has any influence upon the acuity. This, however, showed that the patient had irregular astigmatism. He was given three grains of thiosinamine daily. As in the other cases, the patient was given half the dose for a short period.

The state of vision was noted at regular intervals, and found to be slowly but steadily increasing in acuity, so that at the present time, with stenopæic slit: O. D. V.=20/60 O. S. V.=20/40. However, with the addition of a + 2.00 D. sph. in each eye, vision was raised to: O. D. V.=20/40, O. S. V.=20/30 (a trifle plus). But with the naked eye O. D. V.=20/80 +. O. S. V.=20/60 +. At present, the corneæ look nice and clear, only a trifle hazy.

It is to be added that thiosinamine in this case constantly kept up a mild ocular conjunctival vascularization bordering upon inflammation. During the interim of small doses, however, this irritation completely subsided. This finding corresponds with that of Tousey and others whenever the drug is administered during a latent or a mild grade of inflammation. At such times the low inflammatory condition is liable to be fanned into activity.

C. F., æt. 12 years. For two years has had periodical attacks of phlyctenular keratitis and its sequelæ left each cornea remarkably hazy—in fact, an extensive opacity. Every line of treatment was resorted to, to relieve the condition, but of no avail. He has had no relapse, the last attack being in January, 1897.

The vision in the right eye in August, 1897, was 20/120. This was increased with a + 2.00 D. sph. to 20/80. The left eye was amblyopic in consequence of a convergent strabismus (amblyopia exanopsia). He was given thiosinamine as in the other cases, i. e., 3 grains a day. At the present, the vision in the right eye, with the correction, equals 20/40. Both corneæ are much clearer than they ever were. The treatment was begun September, 1897. It was suspected that the thiosinamine might stimulate the latent tendency of the phlyctenular predisposition, yet it has not done so. Though it has been taken regularly since September, and is still taken, no return of the corneal trouble is noticeable.

The following case of corneal opacity does not show so marked an improvement as the former cases:

Mr. C. P., æt. 45 years. Both corneæ were infiltrated and somewhat opaque in consequence of a very virulent attack of chronic trachoma and pannus some fifteen years ago. As a result, the vision in each eye never was any better than 20/200. After taking thiosinamine for some six months, the vision was raised to 20/80. Though the result obtained is not very striking, yet it demonstrates what can be done when everything has failed.

The above four cases are taken from a series of twelve, and fully illustrate the possibilities of success when thiosinamine, and nothing else, is employed in like cases. Though more clinical evidences are required before unreservedly indorsing thiosinamine and incorporating it into our ophthalmic therapy, it is worthy of a fair trial in all cases of corneal opacity, either recent or of long standing. Then, too, the writer wishes to say that, judging from results in chorioiditis exudativa, it is entitled to a thorough trial in similar cases. Knowing, as we do, the sad prognosis that stares this class of patients in the face, it is no more than just that we should give them any benefit we can, even if we have to resort to the new medication herein outlined.

Whether or not it would be of any benefit to combine thiosinamine with potassium iodide in syphilitic chorioiditis remains to be proven by future clinical evidences. It does seem rather reasonable to employ it since its action is similar to that of potassium iodide. The writer is using this combination in several cases and with apparent success.

If further trials substantiate the present observations, and time proves the results obtained as permanent, then we have in thiosinamine a truly valuable remedy. It will, therefore, be of equal service to the general practitioner and ophthalmic surgeon, as well as a boon for many an afflicted patient.

The clinical results which the writer has had in several cases of catarrhal deafness will be reported in another communication elsewhere.

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"*The Monticello.*"

THE TORSIOMETER—AN INSTRUMENT FOR THE STUDY OF THE RETINAL MERIDIANS.

BY EDWARD P. BREWER, M.D., Ph. D.

OF NORWICH, CONN.

Illustrated.

Operative binocular vision is obtained only when the image is pictured on identical points of the retina. To realize this, not only must the point of fixation be the same, but the meridians must exactly register. The normal position of the so-called "apparent vertical meridians" (Hemholtz) is nearly vertical and always parallel. The methods of determining the position of the meridians have been complex and ill adapted to rou-

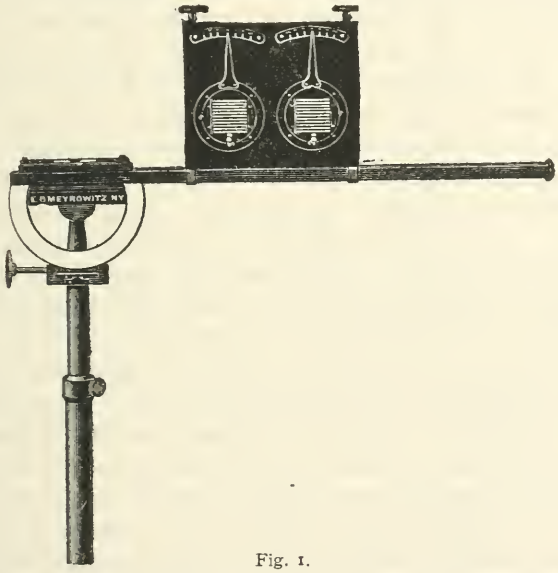

Fig. 1.

tine office work. The subject is, however, of great practical bearing, and enters, as an important factor, into the consideration of nearly every case of heterophoria.

After extended observations, I have devised an instrument which, with nearly two years' use, has proven of such value and interest that I have decided to place it before the profession. My instrument—the torsiometer (Fig. 1)—offers a ready and accurate means of determining the posi-

tions of the vertical and horizontal meridians while the eye is at rest, and of measuring the torsional power of the eyes.

It consists of a plate containing two groups of Maddox rods mounted on a projecting arm of a tripod stand, the various parts of the stand and arm being adjustable. Each group of rods is secured to a rotating disc, which is moved by an endless screw. Attached to the disc is a pointer registering the rotary movements of the disc. Adopting the excellent nomenclature of Dr. Geo. C. Stevens, the movement of the pointer from the center is termed the *plus* torsion, and toward the center the *minus* torsion. The groups of rods may be rapidly changed from the vertical to the horizontal position without disturbing the pointer, so that when the rods are either exactly vertical or horizontal the pointer is always at O. On the reverse side are clips to hold prisms or other lenses. To measure the position of the apparent vertical meridians while the eyes are at rest, the patient is placed in a room with a candle ten or twenty feet away, as may be more convenient, and with no other source of light *in front* of the patient. If considerable ametropia exists, it should be duly corrected. The torsiometer is placed in front of the patient so that a series of horizontal rods is in front of each eye. The eyes are then dissociated by placing a nine-degree prism in one of the clips, base inward. Two long upright bands of light are visible to the patient, which are exactly plumb and parallel if the eyes are normal in balance and the pointers are at O. It is well to study the lines separately, attention being first directed to the right line, and if not erect, the thumb-screw moving the rods should be turned in a direction to secure an erect effect. The left line should be likewise adjusted to appear erect. The lines may be then compared and corrected by the intervening space, and any difference in the width of the space top and bottom corrected. If when so adjusted the pointers are at O, the balance is normal, and the apparent vertical meridians will register. If torsion exists, it will be recorded in degrees of arc, on the scale. Control measurements may be made by turning one set of rods to an upright position, thus securing a horizontal bar of light which, in the absence of torsion, is at right angle to the vertical line when the pointers are at O. The methods may be again varied by placing both bars of light in the horizontal position and, after disassociating them by a suitable prism, adjusted each in turn to an exact horizontal position and parallel. In every position the pointer will be at O if the "longitudinal meridians" are parallel, the latter being always at right angle to the apparent vertical meridians.

We may next measure the torsional power of the eyes. For this pur-

pose the rods are turned to a horizontal position and a vertical bar of light secured. No prism is used and the pointers are at O. The thumb-screw of the right disc is revolved to turn the pointer outward, or plus. This movement is continued until the lines slightly separate at the very top—Fig. 2 (which is the case in orthophoria); the motion is then reversed and the lines just united so that a reversal of the motion will throw them apart if it amounts to 1°. The pointer will then record what is called the plus torsion of the right eye, and betrays the limit to follow in concert with its fellow a line moving outward from the center at the top and inward toward the center at the bottom, the direction of the line being upwards and outwards. The right disc is then rotated inward

Fig 2.

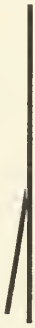

Fig. 3.

until two lines are seen at the bottom Fig. 3, when the motion must be reversed and a single line secured, the direction of the line being upwards and inward. The greatest rotation compatible with the maintenance of a single line indicates the minus torsional power. Placing the right pointer at O, the left eye may be tested in the same manner. In measuring the right eye the pointer of the left is maintained at O, and in measuring the left the right pointer is at O. Turning the rods to an erect position, the resulting horizontal bar of light may be utilized in the same manner to measure the horizontal torsional power.

The vertical torsional power varies greatly. The highest torsion yet observed is plus 26°, and minus 10°. In each of the cases there was a general disturbance in the muscular balance. In eyes with inconsiderable errors, refractive or accommodative, I find the plus torsion about 5° and the minus 3°. The horizontal torsion is about 2° plus, and 1° minus. It may be reduced or absent, but it is seldomed increased.

The distance of the source of light is quite immaterial as far as effecting the torsional error, for in thousands of examinations I have never detected the slightest difference in the torsional error, whether

measured at one foot, or at twenty feet. It is important, however, to secure a very narrow and distinct bar of light, and unless the Maddox rods are quite small, the source of light must be at a distance. In cases with a material reduction of visual acuity, the distant source of light must be reduced for obvious reasons.

The torsional power as determined for one eye represents the sum of the available binocular torsional power. Quite commonly, the torsional power of one eye is a degree or two more than its fellow, and not infrequently double; yet I have no hesitation in declaring that the real working torsional power is represented by the one measuring the most, and *never* the sum of the plus or minus torsional power. In this respect it resembles the abduction. The evidence warranting this belief will be considered at another time, the scope of this paper not permitting of its discussion. The horizontal torsional power is more stable than the vertical but very limited, and appears to bear no relation to the degree of vertical torsion. Its practical bearing, as far as the study of the vertical torsion is concerned, is of small import; indeed its, very existence is, I believe, entirely accidental. This subject will also be considered at another time.

All muscular errors seriously disturb the torsional power, and some the parallelism of the retinal meridians. In hyperphoria, especially of two or more degrees, the vertical meridians are tilted outward, the direction being upwards and outwards. The degree of the plus torsional defect may be but one or two degrees or seventeen degrees, as I have seen in one case, but in every case, even of only 1° hyperphoria, the minus torsional power is reduced. It is not unusual to find only 1° of minus torsional power, and in scores of cases I have found it entirely absent, the vertical meridians scarcely registering. In most cases there is a marked increase in the plus torsional power, especially if associated with esophoria, but this is not so constant as the reduction in the minus torsion.

In cases of esophoria of 7° or more, the meridional parallelism is commonly disturbed and associated, as far as my observations now go, with plus errors. In simple exophoria the meridional parallelism is less frequently disturbed, and then more frequently upward and inward (minus), but the variation is commonly inconsiderable, seldom exceeding 2°. I have not yet seen a minus vertical error unassociated with exophoria. In cases of hyperexophoria the meridional parallelism may be either minus or plus, generally the latter, for the tendency of all cases of hyperphoria is to plus errors, and its influence may dominate; yet in all cases the minus torsional powers will be well preserved, and may surpass the normal. If more extended study shall establish these observations we have a therapeutic hint of no small value.

THE

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EDITORIALS.

THE OPHTHALMOLOGIST AND THE OPTICIAN.

The optician of the present aspires to nothing short of a profession. He is not content with the profits of a mercantile life. He must, perforce, be called doctor or professor, according to his preference. It may be, that before long we shall feel, with the English surgeon, that plain Mister carries with it more dignity than the title of Doctor. It would seem that a man may be a doctor of almost anything that suits his fancy. The conferring of the degree is a matter of indifference. Where the average "Doctor of Refraction" acquires his title seems to be obscure. It is often conspicuous after some optician's name. As to the responsibility of these men, we need say nothing. Since they ultimately make work for the oculist, we should, so far as our pockets dictate, encourage them to go ahead. It has always been the aim of the medical profession to promote the welfare of the "dear public," but the "dear public" do not always want their welfare promoted. Especially is this the case when some legislative act is to be passed by us for their protection. To the medical profession is due the credit of improved sanitary conditions. Have we or the public been the gainers? Yet, public health boards experience great difficulty in obtaining adequate appropriations for their maintenance.

The "Doctor of Refraction," with his full right to advertise, is an expense to the public, but the oculist profits by his bad work. It would seem that, in our capacity of public guardian, we should attempt to legislate against this new evil, the "Doctor of Refraction." Would our motive be understood? Is it possible to teach the public that they are being imposed upon? Would they not conclude that the oculist was being pushed to the wall, and in consequence was acting in self-defense? I am afraid it would be called class legislation.

Where the oculist makes a mistake is in the dispensing of glasses. It is not uncommon for a patient to be given a price on a pair of glasses and nothing said about a fee for examination. That is included in the price given. Such work is purely commercial. It even smacks of charlatanism. Why? Because there is a fee collected *sub rosa*. When we stoop to such commercial bartering we cease to practice our profession, and sink to the level of these "Doctors of Refraction" who have no legal right to collect a fee. By so doing we openly confess that the "Doctor of Refraction," the traveling vender of glasses, and the quack optician are getting the better of us. We confess that we do not deem our services of sufficient worth to collect a fee. If the oculist is so grasping as to desire to add to his fee for examination the additional profit of the glasses, let him do it openly, so that his patient will understand that he has paid for professional services as well as for the glasses. We realize that many small cities do not have an optician, hence the oculist must send for and furnish his patients with glasses. Where this is necessary, let us conduct the transaction in a professional manner.

The optician complains that he is compelled to fit glasses because the oculist does not send him his prescriptions. On the other hand, the oculist insists that the only way to get even with the optician is to furnish the glasses and make the profit himself. It would seem that we are coming to be "opticio-oculists" and "oculo-opticians." Who is getting the worse of this unseemly war, the optician or the oculist? Who has the more to lose? We lower our dignity; they elevate theirs. Let us hope that commercial instincts will remain subservient to professional pride, and that in the end the oculist will still be a physician, and the optician be the same to him as his druggist. G. M. B.

REPORTS OF SOCIETIES.

SECTION ON OPHTHALMOLOGY.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting March 15, 1898. George C. Harlan, Chairman, in the chair.

G. C. Harlan's second case of *kerato-globus*, a sister of the case shown at the February meeting, presented many features similar to it: globular distention and perfect transparency of both corneae; deep anterior chambers; oscillating irides; lenses present; hyperopia of 5 D. and no cupping of disks. The horizontal diameter of each cornea is 14mm., and of each ball at the equator, 24mm.; the pupils are only 1mm., and under atropin 2½mm. During the past two months the vision has been failing, and the fields are decidedly limited. The optic disks, examined with difficulty on account of the small pupils, appear dull and gray, and the retinal veins engorged. The lowered vision is accounted for by the condition of the nerves, and is independent of the kerato-globus. The parents and three children of the patient have no unusual ocular condition. The occurrence of this anomaly in two members of a family confirms the view of its congenital origin.

Discussion.—Edward Jackson found the curvature of the corneae to be uniform almost to the scleral junction, and that the lenses were present, but displaced slightly downward.

W. F. Norris believed the R. lens was present, but in the left eye its presence was doubtful. The patient was probably suffering from progressive optic neuritis.

Edward Jackson showed a case of *Anomaly of the Iris.* The man, aged 69, had good sight until 9 years before, when he had severe pain in the right eye and whole right side of the head. This eye now presents high irregular astigmatism and a pale optic disk; Vn. $\frac{2}{40}$.

The left eye had continued good until four years ago, when vision became impaired without pain or inflammation. There was a macula of the outer portion of the cornea; some opacity of the lens; and the iris, at its upper, inner portion, exhibited a small area entirely devoid of pig-

ment, through which the fundus reflex was obtained. In this direction, also, there was an entire absence of the sphincter of the pupil. Other portions of the pupillary margin reacted to light, but this remained fixed. The pupil and iris of the right eye were normal. Patient denied all history of injury or imflammation in the left eye, and was positive this had remained good after the right eye had been impaired.

Charles L. Leonard by invitation exhibited and described his apparatus designed for the localization of foreign bodies within the cranium and orbit. It consists of a yoke that can be firmly fastened to the patient's shoulders; adjustable upon this yoke is an upright frame which supports the plates, and to which the patient's head is firmly fastened by bands during the entire series of observations. Rigidly connected with this, but adjustable at any angle, in a plane perpendicular to the photographic plates, is an arm which carries the X-ray tube. The relational angle can always be read from a divided arc, situated at the articulation.

The apices of these angles are marked upon the skin, and shown upon the photographic plates by two lead ferrules, which are always placed upon the margins of the plates, and do not, therefore, cast their shadows in the field of observation. They slide upon an aluminum wire permanently placed upon the upright frame.

The tube, foreign body and plates are, therefore, held in a known, rigid relation to each other and the known point, while a series of observations is made, which give the data from which their mutual relation may be mathematically determined, or may be accurately measured by the graphic method.

The sources of error common to other methods, but avoided by this rigid apparatus fixed to the patient are: Changes in the relation of the tube, foreign body, known point, and plates by unconscious motion of the patient or during the interchange of plates. An additional advantage is the absence of all foreign bodies from the field of observation.

The X-ray "burn" is not due to the X-ray, but to the static electric charge induced in the tissues of the patient by the high potential induction field surrounding the tube. It is never serious, and may be prevented by introducing a "grounded" aluminum conductor as a shield between the tube and the patient.

Howard F. Hansell reported a case of diagnosis of the presence of a piece of steel in the left eye by the X-rays, and its localization by the method of Wm. M. Sweet. It was extracted from its site under the lower periphery of the lens after iridectomy, by the medium-sized curved tip of the Hirschberg magnet. It weighed 9.5 mg. and measured $4 \times 2 \times \frac{9}{10}$ mm.

The eye recovered perfectly from the injury, although vision is reduced to the perception of large objects on account of blood in the vitreous chamber. The X-ray plates, so valuable in the treatment of the injury, unexpectedly revealed the presence of another fragment of steel in the orbit near the external outer angle, of which no history whatever could be obtained. The only plausible explanation of its presence was that it entered cotemporaneously with the other injury. Against this supposition, however, is the absence of any external wound, of hemorrhage, of bruise or contusion of the tissues, and that the second fragment was found after removal to consist of steel of a different character and quality from those of the other. Its localization was forcibly demonstrated by the response to the magnet, which, when passed over the skin in its immediate neighborhood, was invariably puckered and elevated. With the aid of the magnet it was easily excised, and its dimensions were found to be 6x1x¼ mm. and its weight 23.5 mg.

Wm. M. Sweet reported, by invitation, the results of his experience in the localization of foreign bodies in the eyeball by his apparatus. The various methods that have been employed resolve themselves into a determination of the angle of the X-ray tube with the foreign body and with one or more dense objects situated near the eyeball. Approximate results have been obtained from the study of the shadow of the foreign body in relation to the shadows of the orbital bones; but owing to the variations in the position of the eyeball, which have been shown by the investigations of Cohen to amount in healthy individuals to as much as 10 mm. behind the edge of the orbit and 12 mm. in front of the same, this method does not equal the accuracy possible by other means. Whatever form of indicating object is used in working out the position of the foreign body, certain factors are essential to accurate results: 1. A tube should be used which may be run at high vacuum, in order that the rays readily penetrate the bones of the head. 2. The patient should be in the recumbent posture to insure steadiness of the head and body. 3. The visual axis should be parallel with the plane of the plate at the side of the head, or, if it deviates, the angle should be measured and allowed for in the determinations. 4. The situation of the indicating objects with respect to the center of the cornea in each individual case should be known, otherwise the determination of the location of the foreign body will vary with the varying situation of the eyeball in the orbit in different persons. 5. The angle of the tube with the indicating objects must be accurately measured. The two indicators being parallel with each other and with the plate, the distance the shadow of one of the balls is posterior

to that of the other is the measure of the distance that the source of the X-rays is carried to the front.

The method has been employed in a number of cases of suspected foreign bodies in the eyeball and orbit, in seven of which the shadows of the bodies were obtained on the plate, and their position indicated. Three of the cases were gunshot injuries, in which the findings were not verified by subsequent operation. One case was sent to me by Dr. de Schweinitz, one shot being located in the left eye, and one in the right orbit outside of the eyeball. Two cases of gunshot injury were skiagraphed for Dr. Hansell, in one of which the shot was located at the apex of the orbit, and in the other patient the position of several shot was indicated, one in the eyeball, one in the orbit beneath the superior orbital ridge, and one in each nasal cavity. Recently I made several radiographs of a patient for Dr. de Schweinitz, in which the piece of metal was located in the lower nasal portion of the sclera. Certain clinical signs appeared to indicate the determination made as correct.

The accuracy of the method of localization has been clearly shown in the patient of Dr. Wm. Thomson, previously reported, and in the patient of Dr. Hansell, shown this evening.

An apparatus to accommodate a larger plate has been constructed upon the same principle, which may be employed for locating foreign substances in the head or any other part of the body.

Discussion.—A. W. Goodspeed wrote: "In my opinion, the simplest and most effective way to avoid X-ray burns is to employ an apparatus powerful enough to admit the tube being placed from 18 to 30 inches from the plate with an exposure far within the limits of danger, say not over 10 minutes as a maximum. I prefer a slow-running break also. My experience is certainly consistent with these views."

G. E. de Schweinitz detailed a case of a piece of *Steel Imbedded in the Sclera* for 2½ years, localized by Roentgen's rays according to Sweet's method. In November, 1895, a piece of steel entered the eye probably near the corneal margin at the inner side. In March, 1896, a radiograph of the eye indicated that a foreign body was located in the orbit at the upper nasal side. It was deemed inexpedient to make search for it. In February, 1898, when Dr. de Schweinitz first saw the case, V.$\frac{6}{20}$; eye quiet; marks of a previous iritis; capsule and lens partly opaque; floating opacities in the vitreous. With undilated pupil no foreign body could be detected in the vitreous or in the coats of the eye. A series of skiagraphs taken by W. M. Sweet located it 11 mm. below the center of the cornea, 3 mm. to the nasal side, and 10 mm. back of the cornea. A

second series taken while the eye was rotated as far as possible downward, shows a movement of the body practically equal to the extent of the rotation of the eyeball downward. This would seem to determine the sclera as the site of the body. With wide pupil dilatation, a small patch of choroidal atrophy streaked with pigment, and with a black center exactly in the position indicated by the radiographs could be seen. Just over this location the sclera was sensitive to the touch of the probe. The field of vision was markedly contracted, and there was uncertain limitation opposite to where the body was supposed to lie. The patient refused to permit an exploratory operation.

A. G. Thomson has had frequent opportunities of studying Dr. Sweet's method, and had found it precise and practical. In reference to the burns from X-rays, he believed that the practical advantages gained by the X-rays far outweighed the deleterious effects produced by them. After making this statement before the Association of R. R. Surgeons in Chicago, October, 1897, it was stated that six suits for malpractice were pending in the Chicago courts as a result of injuries sustained by the X-rays. In two cases an ear had sloughed away, and in one an eye had been lost. Therefore, it was the custom to use the X-ray only on the patient's own responsibility.

C. L. Leonard replied, in answer to several questions by Wm. Thomson as to the details of his instrument, that it had been devised for the localization of foreign bodies anywhere in the head, including the orbit; and, although it had demonstrated in a number of cases the site of the foreign bodies in the eyeball with great accuracy, none of these cases had, as yet, been operated upon, as the results of removal upon the improvement of vision had not sufficiently demonstrated the value of this procedure to induce the surgeons in charge to operate, and none of the cases had required enucleation.

The exposure employed was from five to ten minutes, with the tube at a distance of eighteen to twenty inches. He preferred this distance, because the relation of any error, produced by unconscious movement of the eyeball, to these greater factors in the calculation was almost without effect upon the final result; while in methods in which the calculations were based entirely on shorter measurements, with the fixed point on the eyeball, not only the foreign body, but also the fixed point, would be moved, doubling the amount of error made, while the short distance of the measurements made the error produce a greater effect upon the final result. He followed numerous other observers in preferring to keep the patient's eyes closed during the observation, the visual axis being readily

determined by observing the prominence of the cornea through the closed eyelid.

W. M. Sweet, while acknowledging the possibility of error from movements of the eyeball during the exposure, stated that he had found no difficulty in having the patient steadily fix an object during the short time now required in making the radiographs. With the eyelids closed, as suggested by Dr. Leonard, there was no means of determining the visual axis, an important factor in accurate work. It is not alone necessary to state the distance the body is from a fixed point at the side of the head. The surgeon, to successfully remove the body, must know the relation which this spot bears to the structures of the eyeball. A body located a certain distance from a fixed point of the apparatus might be inside the globe in adduction, and outside in the orbit in abduction. There must exist a factor of uncertainty in any determination of the position of a foreign body in the eye, that fails to take into account the axis of the globe with the photographic plate and the indicating objects, and also the varying position of the eyeball in different individuals with respect to the external orbital angle.

HOWARD F. HANSELL,
Clerk of Section.

MEDICAL ASSOCIATION OF NURNBERG.

MEETING FEBRUARY 2, 1898.

Translated and abstracted from Die Ophthalmoscopische Klinik, March 5, 1898.

BY H. V. WÜRDEMANN, M.D.

OF MILWAUKEE, WIS.

Bergmann. Exudation into the Ciliary Body after Injury. Showed a case from v. Forster's ophthalmic institute, in which the sclera and ciliary body of the right eye had been perforated by a splinter of steel. The wound was at the junction of the cornea, and sclera and both aqueous and vitreous were lost. On the third day after the injury, by illumination, there could be seen a new formation of the size of a bean, which had a silvery shining surface, proceeding from the ciliary body and the wound. This prominence, without any other ophthalmoscopic changes in the course of ten weeks, was half absorbed and without the occurrence of vitreous opacities or inflammatory symptoms. The tension was reduced for a week, and then became normal. The visual field for white and color was physiologic. The visual acuity, after correction, was 5/x. For the differential diagnosis of such pathologic changes, he shows that the

clinical course allows us to differentiate with certainty: 1. Purely reactive exudation from foreign bodies which proceed from outwards into the wound. 2. Tumors. 3. True or false cysts. 4. Exudation without membranous coverings. The clinical picture is that of an active displacement from its base of the pars ciliaris retinæ, which is an exudate from the ciliary body under its epithelial covering, whose protracted course is furthered through the free end of a ciliary process, being included within the exudate.

WÜRZBURGER MEDICO-PHYSICAL SOCIETY.

MEETING FEBRUARY 10, 1898.

Translated and abstracted from Die Ophthalmologische Klinik, March 5, 1898.

BY H. V. WÜRDEMANN, M.D.

OF MILWAUKEE, WIS.

Bach. Upon the Ciliary Ganglion and the Center for the Pupillary Reaction. The author gave a short critical review of the previous experiments upon the nature and function of the ciliary ganglion. From these and from his own experiments upon the normal ganglions of cats, monkeys and rabbits, and from experimental results after exenteration of the bulb with more or less complete destruction of the sensory nerves of the cornea, he concluded that the ciliary ganglion is a sympathetic structure. The author spoke further concerning the results of researches upon the location of the reflex center of the pupil. He had decapitated monkeys, cats and albinotic rabbits, and concluded that after an ordinary decapitation, even when done pretty high up, direct as well as indirect pupillary reaction remains. By this there is always left a cervical portion of the spinal cord. If this portion be destroyed with a knife immediately after the decapitation, then the pupillary reaction is lost. From this experiment he concludes that the reflex center of the pupil is in the upper part of the cervical portion of the spinal cord.

Wolff said that in the case of a paralytic there were objective symptoms of pupillary paralysis; the posterior columns of the spinal cord as low down as the third or fourth cervical vertebra were found to be destroyed. This patient died of a carcinoma, which had affected the lower part of the spinal cord. In examination of a number of cases of paralysis and tabes, W. found that where there was pupillary paralysis there were changes of the cervical portion of the cord, and that where there was no pupillary paralysis no changes were found in this part.

WESTERN OPHTHALMOLOGIC AND OTO-LARYNGOLOGIC ASSOCIATION.

Abstract of the proceedings of the Third Annual Meeting, held in Chicago, April 7 and 8, 1898.

The association met in the rooms of the Chicago Medical Society, and was called to order by the First Vice-President, Dr. J. E. Colburn, of Chicago, who introduced Dr. F. Henrotin, President of the *Chicago Medical Society*. Dr. Henrotin welcomed the association on behalf of that society and local profession. He spoke of the necessity for modern specialists, and said that all recognized their value. He believed in societies and organizations. While there might be injustice done here and there, such societies should live and thrive and multiply.

Dr. A. Alt, of St. Louis, responded to the Address of Welcome. He thanked Dr. Henrotin, in behalf of the association, most heartily for the very kind words with which he had welcomed the members on the occasion of their third yearly meeting.

The President of the association, Dr. B. E. Fryer, of Kansas City, was then presented, and delivered a brief address.

Dr. H. Knapp, of New York City, was then introduced, and delivered a very interesting and instructive address, entitled *The Radical Tympano-Mastoid Operation.*

Dr. Hugh T. Patrick, of Chicago, followed with an Address by Invitation, in which he dwelt upon the kinship of neurology, ophthalmology, otology, laryngology, and rhinology.

Dr. Adolph Alt, of St. Louis, Mo., read a paper entitled *Recent Researches into the Histo-pathology of Trachoma.* The author's researches in this direction date as far back as 1876, when he inoculated rabbits' eyes with trachoma. He was perfectly successful in producing a disease which apparently differed in no way from the real trachoma. However, this disappeared again in the course of from one to two weeks. He had some of the old specimens still, and what he had succeeded in producing in the rabbit's conjunctiva differs histologically in no way from the disease in the human conjunctiva. Leber has had the same experience. After a lapse of years the author again took up the study of this subject.

He has collected a considerable amount of material by excising trachoma granules and cutting them into sections. The sections had been studied without the finer staining methods of more modern times, and the conclusions arrived at were that the trachoma granule must be looked upon as a miliary lymphoma of the conjunctiva.

About a year ago, being made some what familiar with the modern methods of blood examination by differential staining by Dr. L. Bremer, it occurred to the author that the smearing out the fresh trachoma granules might be done in a similar way, and enable him to gain more information than was to be obtained from examining sections of the hardened material. The method, indeed, offers immense advantages over any other. He had, in the course of about a year, squeezed out every trachoma granule and many follicles in follicular conjunctivitis which came under his observation, whether they lay superficially or, as in old cases, buried in the depth of the tissue. This fresh material was smeared out between two slides, and allowed to dry in the air. Some of these slides were then stained without any further procedure. Some were hardened in formol, some in alcohol, some in alcohol and ether, some in boiling alcohol and ether, and another larger series were heated to from 120° to 140°, after the method of Ehrlich; most of them were simply drawn a few times through an alcohol flame before staining. The results did not seem to be materially altered by these different methods. As staining materials he had used a great variety of aniline dyes, hematoxylin and eosin. The best staining was obtained by the differential stains composed of several colors. When following up these curious deeply-stained cell-forms and searching for their origin, he came upon an immense cell with a large, pale nucleus, in the protoplasm of which were embedded smaller and larger bodies, which were in part very deeply stained. While these bodies seemed sometimes to simply lie embedded in the granular protoplasma of such a cell, in others they were surrounded by a clear space. In other similar cells clear spaces seemed to indicate where such bodies had formerly been enclosed. Since his attention was first drawn to these peculiar cells, he had never missed them, and he was satisfied that they were more frequent in recent than in older granules. While they are in some specimens rarer, in others they are extremely numerous. The bodies embedded in these cells appear with some stains like round bodies with a piece eaten out, while with other stains it becomes clear that they are mostly spherical, or nearly so, but that only a smaller or larger portion of them, which is sometimes semilunar or band-like in shape, sometimes round like a nucleus, takes on a deep stain, while the remain-

der is much more lightly colored. Sometimes there are but a few such bodies in such a cell, sometimes their number is so great as to make it impossible to count them. Frequently larger deeply-stained round bodies are seen lying close to this large cell, and by their whole appearance give the impression that they are just such bodies which have grown larger, and are in the act of leaving or have left their former abode. Sometimes he has found only a mass of such bodies lying together near a very pale, large nucleus; the protoplasma enclosing them had evidently disappeared. The more he studied these bodies, the more he was impressed with the fact that they must play an important rôle in the histology of trachoma. The more he searched for them and their derivatives between the other round cells of the granule, the more cellular forms he found, which he thought were such bodies enlarged, and believed that the cells with the small amount of protoplasma lying only at the pole, mentioned before, are the oldest forms of these bodies. It is not at all unlikely that in these bodies we may have to deal with an organism which is the cause of the trachoma granule. That they play an important rôle in its formation, he thinks cannot be doubted. They are the trachoma parasite. Contrary to other observers, he has never seen any reticulum, nor any connective tissue fibers or cells between the round cells of which the granule is composed. Another strange fact is, that although he has a number of injected specimens, which show that the trachoma granules are pervaded by numerous blood-vessels, and although he has in many a fresh specimen, put on the slide without any pressure, seen undoubted channels filled with blood—in none of these smear specimens has he come across any tissue which could be claimed as that of blood-vessel walls. Yet every specimen contains many erythorcytes. It is, therefore, probable that, as it is known to be the case in sarcomata, the blood in the granules is not contained in distinct blood-vessel walls, but rather circulates in clefts in the tissue without other walls than the cells of the granule themselves. Notwithstanding all clinical difference between the so-called follicular conjunctivitis and trachoma, all that he had described in the foregoing applies as well to follicular conjunctivitis as to trachoma. Particularly the bodies which he considered to be parasites, he has always found in follicular conjunctivitis.

Discussion.—Dr. H. Gifford, of Omaha, like many others, had been possessed with the idea that trachoma must be caused by some animal microbe, since the best bacteriologists who had investigated the disease have found no bacteria to account for it. He started a search for the trachoma plasmodium, and for some time thought he had found it, but

afterwards found that the same microscopical pictures could be obtained from the mildest cases of follicular conjunctivitis. He has not gone deeply into the mystery of trachoma, and can add nothing to Dr. Alt's admirable description. That the same structural conditions should be found in trachoma and follicular conjunctivitis is not surprising. In other parts of the body the irritation produced by the most various sorts of bacteria results in practically identical histological changes.

Dr. Alt (closing the discussion).—There is very little more to say on this subject. Of course, it is utterly impossible, under our present conditions, to prove the particular parasite that causes trachoma. He thinks, from the enormous frequency with which it is found, that it is of more importance as a causative factor than has been known heretofore. With reference to the infectiousness of trachoma, he does not see how anybody of large experience can doubt it, although he knows there are some practitioners who do deny it. At the Heidelberg ophthalmological meeting a prominent oculist stated that so-called non-infectious follicular conjunctivitis was after all an infectious disease, for the reason that he had infected himself, and at the end of seven months he was not entirely rid of it. This gentleman infected himself to find out whether the disease was really infectious or not. The inoculation of rabbits with trachoma does not help us materially, because, while we may produce the disease in these animals, it does not last. This brings me to the consideration of another point. Dr. Burnett and a number of other gentlemen have at length dwelt upon the fact that the eyes of the negro are immune to trachoma. Dr. Alt thinks this immunity is due to the negro having a greater lachrymal glandular tendency, and consequently the tears flow in larger quantity than in white people. The secretions of the body are antiparasitic, and the tears in coming from the conjunctival sac being free from the ravages of bacteria, may be one explanation why the negro is so much more immune from infection with this particular parasite.

Dr. James Moores Ball, of St. Louis, reported a case of *Quinine Blindness.* (An abstract of this paper could not be procured from the author.)

Dr. A. Alt, of St. Louis, wished to hear some of the members say something with regard to the final outcome of these cases of quinine amblyopia. He knew of one case that was cured by treatment, and a year afterwards the field was reduced to two small patches in either eye. It is quite apparent, if this case was looked upon as a cure, that the disease leads to atrophy, which later on spreads, and ruins most of the

conductive apparatus. Some of the gentlemen may have had such cases and been able to follow them up.

Dr. H. Knapp, of New York, recalled two cases that he saw two or three years after the patients were first seen, or after restoration, and vision had remained the same; if anything, it was better. They were young and the atrophy was not of very high degree, nevertheless it was a true picture of quinine amblyopia.

Dr. H. Gifford, of Omaha, happened to have had an experience of this kind in a young lady of nineteen, who came to him and presented a typical picture of atrophy of the optic nerve and concentric limited field. She gave a history of quinine poisoning. About fourteen years before she had taken a large amount of quinine. For some time after she was nearly blind, but Dr. Gifford did not see her. She gradually improved, the sight becoming stationary. It was between ten and fifteen years after taking the quinine that Dr. Gifford saw her. He found the fields contracted about 30° concentric, and vision was 20/40 in each eye. The optic nerves were remarkably atrophic.

Dr. B. E. Fryer, of Kansas City, said his experience was limited to one case which he saw shortly after dimness of vision began, the patient suffering from malaria. He watched that case a little over a year and there was no color blindness. The fields in both eyes, as well as visual acuity, were normal. Dr. Fryer thinks that if the dimness of vision is not treated at once, and if the quinine has been used for any length of time, there is more or less interference with vision.

Dr. A. C. Corr, of Carlinville, Ill., has given a great deal of quinine. For years he did general practice in a district where there was much malaria and gave quinine in large doses, and to find cases of amaurosis growing out of the administration of quinine in large doses is astonishing. When patients had what was called a congestive chill, quinine was administered in various ways, injected into the rectum and used in solution and powders. Dr. Corr thought it a question whether some of these cases of amaurosis are not a mere coincident in the administration of any drug. He has never known patients to complain of their eyes after taking quinine, and has given a great deal of it.

Dr. A. Alt, of St. Louis, while a medical student in Heidelberg, remembered seeing very large doses given in cases of typhoid fever, and the patients were not seriously affected by it. Because quinine is given in large doses in a great many cases and no serious results are produced, does not prove that it is impossible to have them following its use.

Dr. B. E. Fryer, of Kansas City, read a paper on *The Antiseptic Prepa-*

ration of the Conjunctiva for Cutting Operations of the Eyeball. He said the terms antisepsis and asepsis were rather carelessly interchanged by many practitioners, and this ought not to be. He insisted that in many instances surgeons did not, nor could not, make a surface aseptic if they strictly included in the word asepsis not only the absence of septic material, but also the absence of the cause of sepsis, namely, pathogenic bacteria. He then showed how and why this was true. In antiseptic work on the conjunctiva, only very weak solutions of sublimate or of iodide of mercury could be used. He maintained that a mercuric chloride solution in the proportion of 1-6000 could be instilled in the conjunctival sac every day for weeks without any reaction being produced. The method of preparing the eye for a cutting operation upon it, which he employed, is as follows: The face is thoroughly cleansed with soap and water, and then the orbital region is washed carefully with a carbolic acid solution 1-50. The eyelids and eyelashes at their roots are especially cleansed. The conjunctival sac is flushed carefully with 1-6000 sublimate solution, and a bichloride gauze pad is put over and retained upon the eyelid, and it should extend over the brow and nose and down upon the temple and cheek. The dressing is changed daily, and daily the eyelids, brows and cheek are washed with carbolic acid solution, and the gauze renewed. Latterly, in the beginning of the antiseptic preparation the speaker had instilled protargol solution, one per cent., say for four or five days, and at the end of that time dropped in the mercuric chloride solution. He finds in certain cases, especially in those patients who, from having prostatic trouble, and who void more or less pus with the urine, are very liable to infect the eye or have infected it. In such cases the protargol seems to stop the pus flow from the conjunctival sac readily, and also removes the conjunctival congestion. These prostatic cases require greater care in preparation for eye operations than is usually given them, even by those who believe in correct antisepsis. Many of the cases having pus cocci enter the conjunctiva, which cocci, while they have only an innocent surface lodgment, will there produce purulent destruction of the eye if admitted unrestrained onto the globe. By prolonged preparation and following the method he had outlined, he thought oculists could restrain the pathogenic microbes in the conjunctiva as they are restrained in the derma, and sufficiently long to allow of healing before the restraint is removed by the germicides' final removal or elimination. He had microscopically demonstrated streptococci from the conjunctiva of eyes which were to be operated on, and which streptococci were so attenuated in power by the continued antiseptic preparation that no bad result followed

the operation. Of course, the condition of the nares must be looked after, and he had found that a weak solution of tincture of iodine in albolene used as a spray did effective work in attenuating microbes in the nasal cavities.

Discussion.—Dr. C. D. Wescott, of Chicago, secures ideal healing, after cataract and other operations upon the eye, without the use of any germicide whatever. Dr. Wescott's operations are almost all done in a private operating room, where nobody else operates. Many of his patients who present themselves for cataract and similar operations come in from the country, and, wishing to go home as soon as possible, are frequently operated upon the day following their admission to hospital. The patient takes a general bath, and the head is thoroughly scrubbed the night before the operation. Then, half an hour previous to the operation, the face is scrubbed with soap and water; and immediately before, either cocaine or holocain is instilled into the eye. Dr. Wescott, personally, scrubs the lids, the brows, and lashes with a warm solution of boric acid. The nurse has previously done the same thing with soap and water. He then flushes the conjunctival sac with a warm solution of boric acid, using Dr. Grüning's fountain vessel, from which can be poured a small stream. He does not believe that boric acid is anything more than an inhibitory antiseptic, if it is that. Frequently the eye is dressed after the cataract operation every two days only, and on the sixth or eighth day the bandage is discarded. Frequently the case goes through what is called hyperemia; but it is a congestion which is not disagreeable, and very often the lids are not gummed together if the dressing is made every two days. Where there has been, before operation, any slight congestion of the conjunctival sac, Dr. Wescott is in favor of applying a dressing each day, and using a little sterilized vaseline to prevent gumming of the lids. As a dressing, two or three layers of borated gauze are applied against the lids, and over that borated cotton and a mosquito-bar bandage. At times he has regretted the use of bichloride solutions even in the strength of 1 to 6,000, because the conjunctiva has been irritated by it; that is, the conjunctiva would be red, and there would be gumming up of the lids on the following day, which does not occur when the simpler methods are used.

Dr. Knapp, of New York: Dr. Wescott speaks in general terms that he is satisfied with his results. He gives us no statistics. It would be interesting to know how many cases of suppuration he has had, if any, and under what conditions.

Dr. W. L. Dayton, of Lincoln, Neb.: The question asked by Dr.

Knapp is very pertinent, and reminds him that in the only case of cutting operation on the eyeball that he remembered of having had that suppurated, was when he used a 1 to 10,000 bichloride solution. Like Dr. Wescott, he relied almost solely upon the warm boric acid solution, and cannot recall now, of the cutting operations made for the extraction of cataract, iridectomies, and other operations, of ever having had suppuration of the eyeball. He does not remember of having had a single case of suppuration or panophthalmitis following a cutting operation under his method of rigid asepsis. Dr. Dayton follows the usual procedure in these cases of cleansing the face, brows, and eyelashes thoroughly before irrigating the conjunctival sac. In cases of conjunctivitis, or of any trouble with the sac, he uses a bichloride solution, but in office work and in the hospital relies entirely upon boric acid. Formalin has been tried, but its action has not been satisfactory. In all cutting operations upon the eye, a bandage is used in the place of isinglass or plaster strips, or anything of that kind. Whether boric acid solution is a bactericide is a question. So long as results are good, Dr. Dayton does not care to find any better solution for preparation in eye cases.

Dr. A. Alt, of St. Louis: While agreeing with what Dr. Fryer has stated in his paper, and while always using bichloride solution, 1 in 5,000, or 1 in 6,000, started with 1 in 5,000, then came to use 1 in 10,000, and is still satisfied with it. He has had two cases of suppuration following cataract extraction, in which bichloride solution was used in the strength of 1 in 5,000. Both of these cases occurred in hospital practice, where everything seemed extremely favorable. One of them was an old physician. Instruments and bandages were thoroughly sterilized. Dr. Alt, the nurse, the bed, and the room were all thoroughly sterilized, and yet suppuration took place. He then became convinced that on account of the extreme age of the patient the caustic effect of the bichloride in this strength was probably too much, and caused necrosis of the tissue. After that bichloride was never used in that strength, and a case of suppuration has not occurred since in his practice. In spite of all our antiseptics, or chemical agents, there may be cases of suppuration. In spite of the washing of instruments and rendering them thoroughly sterile, suppuration sometimes takes place; infection forms in the conjunctival sac, and bacteria from the nasal passages cannot be guarded against.

Dr. Alt would like to know whether any of the gentlemen are acquainted with, or have tried, the method of operating on cataract and in the after-treatment applying no bandage whatever. Papers have been published recently, one by a Scandinavian, in which series of cases are

reported, and patients after cataract operations have had no bandages applied whatever. In these cases it is stated that healing was natural and as kindly as had ever been seen. No suppuration followed, but there has been prolapse in one or two instances. The other practitioner is an oculist in Darmstadt, Germany, who published a series of sixty cases, in which he had the same results, but he applied a wire gauze mask over the eyes, with no bandage over the mask. He reasons in this way, that the natural flow of tears is an excellent bactericidal remedy, and that by not closing the lids and allowing them to remove the tears, it is a more efficient safeguard against any infection taking place than we can ever have by excluding air and restraining the flow of tears by means of a bandage. If that is the case, maybe all of our antiseptic ideals will fall to the ground.

Dr. James Moores Ball believed one source of infection in cataract operations is the condition of the sweat glands. He is led to this view by an unfortunate case that he had last summer, where, after taking all the usual precautions, the forehead became infected, and for several days following the day on which the operation was done, the weather was extremely warm and the patient was perspiring freely. He would like to ask some of the older members of the association if they make it a practice to operate on cataracts in hot weather, or whether they consider the condition of the temperature. In this case the usual precautions were taken. Everything was boiled, the patient thoroughly scrubbed, and the conjunctiva washed with a 1 to 4,000 bichloride solution. There was no nasal trouble and no trouble with the lachrymal apparatus, and the source of infection is unknown unless it came from the sweat glands. In male patients, whenever they will submit to it, the eyebrows are shaved in order that the parts may be thoroughly scrubbed. You cannot remove the cilia, but it would be a good thing if we could do so. Certainly, in many instances it is a difficult matter to clean the eyebrows without shaving them, then the skin can usually be cleaned.

Dr. Alt, in answer to Dr. Ball's question, said that an oculist in Darmstadt, Germany, pulls out all the hairs on the eyelashes previous to operating for cataract.

Dr. A. E. Prince, of Springfield, Ill.: All that has been said and written with regard to the preparation of the eye preliminary to cataract extractions or operations on the eyeball has reference to rendering the conjunctival sac antiseptic. A case occurred in his practice which led him more than any other to the opinion that some attention should be turned to the preparation of the inter-vascular circulation of the con-

junctiva and the preparation of the nutrition of the patient. These patients should be examined with reference to the condition of the blood, so as to withstand the invasion of micro-organisms. In the case referred to, an operation for entropion was performed, and following it there was considerable swelling about the tissues of the lids, followed in three days after the operation by a corneal ulcer. It was an old case of trachoma. It was entirely healed, and the cornea was normal. This ulcer was serpiginous in character, and extended about and encircling the cornea, with the center of the cornea smoky. The eye was thought to be lost. As a matter of desperation, the lady was given 3 grains of quinine and 10 drops of tincture of iron every three hours, also the sixtieth of a grain of strychnia to increase the circulation of the heart. Upon investigating the previous history of the case, it was found that she had had boils, having had seven on one arm. At the time of the operation she seemed to be a well woman, and the operation was performed without asking any questions about these boils. Fortunately the treatment improved the condition. The wound in the skin of the lid showed no tendency whatever to heal. After fortifying her system with internal medicament, the wound assumed a healthy condition, nutrition was established, the wound healed, and the cornea was saved. This may seem a digression from the subject under discussion, but the point is brought up in order that we should look to the condition of nutrition of the individual upon whom the operation is to be performed, such as is illustrated and presented in this case. If bichloride of mercury, warm boric acid solution, or the biniodide of mercury are used, if the intervascular circulation of the conjunctiva is not in good condition, the cornea will slough. If the micro-organisms enter the conjunctival cut, and the condition of the blood is such that it is not phagocytic, the cornea will slough, and there will be trouble. The preparation of the conjunctiva should be looked after by thoroughly inspecting the nutrition of the patient, and making it as important a part of the preparation as irrigating and dropping in solutions and antiseptics for several days in advance.

Dr. L. R. Culbertson, of Zanesville, O., has not used bichloride of mercury excepting in sub-conjunctival injections. He always uses formaldehyde solution in the strength of 1 to 3,000, or of 1 to 6,000, and thoroughly irrigates the lids, eyelashes and eyebrows before operation. Before operating he inquires as to whether there is a rheumatic or gouty tendency, or whether there is any tendency to diabetes, and if there be such a tendency requests that a nitrogenous diet be shut off. If there is

nothing more than a slight inflammation, the patients are given salicylate of strontium, which is one of the valuable salicylates, and in this way trouble is avoided as far as possible from uric acid and its effects. By shutting off all starches and sugars it will lessen any inflammation where there is a diabetic tendency.

Dr. ———, instead of putting bichloride of mercury into the conjunctival sac, has found it excellent practice to have the patient take it internally. During the last four or five years has used no solutions of any kind within the conjunctival sac if it be healthy, and also if there be no disease of the lachrymal apparatus or nasal trouble. He has paid a good deal of attention to the preparation of the patient, and has followed out the suggestion given in a little manual by Gould and Pyle, of administering a mixture of bichloride of mercury and iodide of potassium, syrup of sarsaparilla and water, so that the patient gets in the neighborhood of the twenty-fourth of a grain of bichloride of mercury for two days prior to the operation, leaving the eye and conjunctival sac entirely alone. It has occurred to him from personal experience that we are liable to, and oftentimes do, irritate the conjunctival sac in our attempts to render it aseptic. This irritation, no doubt, has been the starting point of infection in many cases, which after the operation has ruined all the work that we have attempted to do for the patient, so that if by proper preparation of the patient prior to operation we can avoid the use of antiseptics in the eye, we have at least gained one good point, that is, we have certainly not added any additional irritation to the eye in our attempts to render the conjunctival sac aseptic.

Dr. A. C. Corr, of Carlinville, Ill.: Reference has been made to the nasal apparatus, to see that it is all right. Now, it takes a great deal of insight and close examination to see whether it is all right or not, and even though you may spray out the nasal cavity and wash out the conjunctival sac, if the outside area is not immediately cleansed, there are germs enough left to infect the eye in a day or two, or soon after the operation. He wishes to emphasize this particular point, that if you slit up the canaliculus and nasal duct into the nose, plugging it up from below, and keeping it so until the corneal surface is healed, it would be an admirable plan.

Dr. Corr believes the point mentioned by Dr. Prince is one of great importance, namely, that we have lost sight, in our ardent zeal after more antiseptic preparations, of the importance of paying particular attention to the nutrition of our patients in connection with operations upon the eye. Patients with an impoverished condition of the blood do

not recuperate very rapidly after surgical operations upon the eye, and consequently it is important for us to bear in mind the nutrition of the patient.

Dr. Frances Dickinson, of Chicago, agreed with Dr. Prince's constitutional treatment in these cases, and thinks boric acid and the bichloride of mercury treatment have their place. She doubts if it is wise for us to use any one of them exclusively. In a case for operation on the eye, it is necessary to examine the patient's urine before operation, and we should see to it that the processes of elimination are being carried on properly. Nutriment is carried to the eye by the blood-vessels; waste is carried off by the blood-vessels and the lymphatics. We have all the circulatory processes going on in the various structures of the eye which we must consider in dealing with diseased conditions of it.

Dr. H. Knapp, of New York, said the majority of cases of cataract he had lost were bad operations, the fault being on his part, and no one here has touched upon this point. He has lost more cases from one fault than all the rest, and that is insufficient preparation. He has produced septic conditions by so doing. Every oculist who has performed many cataract operations must necessarily be of the same opinion. He sees about one-half of one per cent. of suppuration in his cases. Remembers the work he did last winter. He had one hundred and eleven extractions from October until now, and there was one case of suppuration; the eye was lost. It was a case of suppuration of the iris. He has abandoned almost all antiseptics, and simply endeavors to keep the eyes of his patients thoroughly clean. If any one of his patients has conjunctivitis, or anything of the kind, he refuses to operate on him until this condition is cured. He does not bandage the eye, as he is inclined to think that it brings about congestion. In these cases we cannot sterilize the skin of the conjunctiva completely, but nevertheless we will get good results in most of the cases from operative interference. A healthy man stands much better chance for a prompt recovery than one whose nutrition or vitality is lowered. The case lost this winter was a gentleman ninety-one years old. The operation was performed upon him, as far as could be seen, without any fault whatever in technique. The eye was completely compressed like a wet cloth. The lens came out completely. There was an angular folding of the whole eye. The next day he had some irritation, and two days later the inflammatory condition seemed to be only of a mild character, but it proved to be a purulent iritis. The iris was greatly swollen, and the pupil was filled with yellowish material. The wound was at once opened and what matter there was in the anterior

chamber let out. This was done daily, and the eye got well. He left three weeks after the operation, there being not a particle of sloughing in the cornea, but there were evidently changes in the iris, and the perception of light was poor. If a similar case should present itself in the future, the patient being extremely old who showed no power of resistance, he would inject physiological warm salt solution, so as to restore the parts to their natural condition. The cases in which suppuration took place were those in which an insufficient section had been made. Dr. Knapp considers a clean operation, where the wound and everything are in the best condition, more important than the use of antiseptics.

Dr. Albert Hale, of Chicago: We seem to follow in the line of the obstetricians in our attempt to disinfect the mucous membrane around the eye, and we cannot do it any more than the obstetrician can disinfect the passages for the birth of the child. In his obstetrical studies in Prague, it was taught that it was a difficult matter to render the vagina aseptic, and students who are now coming back from there say that no effort is made in normal cases to disinfect the vagina. It is left to nature to carry on the normal secretions, and why should we not leave the conjunctiva alone? Dr. Hale's remarks do not apply to cases of conjunctivitis or any condition similar to it, but an eye that comes to us for operation. So far as statistics are concerned, the result of an operation will be better if the eye is not previously irritated by agents with which to obtain asepsis. If we take a lesson from obstetricians in this particular, it will be valuable to us.

Dr. Fryer (closing the discussion) believed there are many cases in which the wounds heal after cutting operations without any germicides. He believes it is so in the majority of cases. The single loss of an eye is a serious matter. We cannot tell in any case whether an eye is infected or not without making a microscopical examination of the secretions, or putting on a dressing and watching it. He has been misunderstood in regard to the dressing after operations. The patient is generally allowed to go forty-eight hours after the first dressing. This can be done if the operator is careful in his antiseptic work.

In regard to solutions, there is a great deal of carelessness on the part of druggists in making these preparations. You may order 1 to 5,000 or 1 to 10,000 solution, and they make it double the strength. These solutions must be correctly made. A case was recalled that he had had within a month, in which the operation was clean and the man had been prepared two weeks before operation, but at the end of the fifth or sixth day the bandage was taken off, and he rubbed and scratched his eye. The eye was

examined carefully and the wound found partly open. The eye was infected and a small quantity of pus was found in the anterior chamber. An antiseptic dressing was applied, shortly after which the pus disappeared. Dr. Fryer has rarely ever seen any of these cases of pus in the anterior chamber without serious results following them. Dr. Dayton and others spoke of boric acid. Careful experiments by bacteriologists show that boric acid is inert as a germicide. In old men with prostatic trouble, upon whom we operate, we should examine the urine for albumin and sugar in every case. We should know whether the patient has had diabetes or renal trouble. We ought to know this before we operate, particularly the general condition of the patient, which has an important bearing on our operative procedures. Dr. Ball spoke of the sweat glands as being a source of infection of interfering with healing of the wound. We should look out for that. Dr. Fryer agrees with Dr. Prince of the importance of looking after the general nutrition of the patient and the condition of his system. He would not have operated on Dr. Prince's case at all, nor would Dr. Prince have done so if he had known the patient had had boils. Boils are indicative of a depressed condition, which we must correct before we operate upon the eye.

Dr. Knapp has alluded to insufficient section in these cases. Dr. Fryer thinks he has probably seen as many of Dr. Knapp's operations as any one present, and would say if there was any imperfection it had nothing to do with the unsuccessful case.

Dr. H. Gifford, of Omaha, Neb., followed with a paper, entitled *Four Cases of Parinaud's Conjunctivitis.* This disease was first described by Parinaud in 1889, and hitherto nine cases of it have been described in France, while in Germany and Austria the same disease has been described by Goldzieher as lymphomatous conjunctivitis. It is characterized by rapid swelling of the lids, with more or less muco-purulent discharge and the development on the folds or tarsi, or both, of large rounded granulations, which not infrequently are fungiform or polypoid in form. Between the granulations small conjunctival ulcers sometimes occur. Soon after, or in very rare cases, before the affection of the lids, the lymphatic glands of the neck and face on the affected side generally become swollen and tender to a very marked degree, and suppuration not infrequently occurs. The disease is almost invariably onesided, is apparently not contagious, and appears to undergo a spontaneous cure in the course of some months when left to itself. Treatment in the worst cases affects the disease very slowly. The cases in which the tarsal surfaces are covered with granulations might be mistaken for very pronounced trachoma, while in those

where ulcers of the folds surrounded by granulation tissue occur, the question of tuberculous conjunctivitis might be raised. The cornea is rarely, if ever affected, and the subjective symptoms are comparatively slight. Parinaud has called the disease infectious conjunctivitis of animal origin, partly because some of the French cases were butchers or farmers, but the evidence on this point is not at all conclusive. Bacteriological investigations as to its cause have been practically without positive results. Two of Gifford's cases were somewhat atypical in so far as that in one of them the swelling of the lymphatic glands was confined to a row behind the sterno-mastoid muscle, while in the other the granulations were hardly as large as usual, the most prominent conjunctival feature being the presence of numerous ulcers mostly on the folds, but some of them on the tarsi and bulbar conjunctiva.

Dr. T. A. Woodruff, of Chicago, read a paper on the *Use of De Zeng's Refractometer*. The conclusions of the paper are: (1) It is not a time-saver. (2) It is not accurate in determining the amount and axis of the astigmatism. (3) It is liable to produce an over, rather than an under, correction of the astigmatism. (4) In old people, or where a cycloplegic is contraindicated, it will prove of assistance. (5) In myopia and hypermetropia it is satisfactory in determining the amount of error under a cycloplegic.

Discussion.—Dr. Frank Allport, of Chicago, has used the De Zeng refractometer somewhat, and regards it as a very useful adjunct. It is not accurate any more than any other method of arriving at errors of refraction. He would not depend upon the refractometer absolutely, neither would he depend upon skiascopy or upon the ophthalmometer. It is a much more accurate method of estimating the axis of astigmatism than the one which is perhaps almost universally used, namely, the ophthalmometer. The refractometer is an instrument which is as valuable as any means we have at our command for estimating errors of refraction, except, of course, the test lenses under a mydriatic. Dr. Allport regards the refractometer as a valuable adjunct, and would not like to be without it. It is quite necessary, however, to use a mydriatic in estimating errors of refraction with this instrument as with any other method.

Dr. Frances Dickinson, of Chicago, does not think the refractometer is to be relied upon as a last resort unless we use a mydriatic; but considers it as an aid, and would not like to do without it. It has this disadvantage, as all instruments have, namely, that it does seem to influence the patient to use the accommodation, though it is not intended to do so. It is not a time-saver.

Dr. A. E. Prince, of Springfield, Ill.: It is generally conceded that the test lens in determining the amount of the error of refraction work is the last court of appeal, and Dr. Prince makes the appeal to begin with, of using the test lens. So far as he is concerned, we may use of any device that will do away with a reliable cycloplegic. If you get your axis of astigmatism by these devices, you have to appeal to your test lens before you are satisfied anyhow, and why not use the test lens to begin with?

Dr. A. E. Prince, of Springfield, Ill., read a paper on the subject of *Extreme Non-cicatricial Ectropion of the Lower Lid.* He summarized an experience of fifteen years, during which time he has been treating these cases by means of an operation, which he described as follows: (1) Slit the canaliculus of the lower lid, if it has not already been done. (2) Make a linear incision 2 mm. from and parallel to the lid margin, through the conjunctiva and tarsus, extending the entire length of the tarsus. (3) Midway and transverse to the line of this incision, divide the tarsus with the least possible injury to the conjunctiva. The author does this by the introduction of the Graefe knife between the conjunctiva and tarsus. Each half of the divided tarsus is now to be grasped at the free end, and dissected out, leaving the conjunctiva intact. This is accomplished by means of Stevens' tenotomy scissors. (4) The lid is supported by a bandage for three days, when the patient is discharged, with directions to use digital massage in an upward and inward direction. In the absence of general anesthesia, he recommends a four per cent solution of cocaine, and locally, a sixteenth per cent solution to the inverted lid. No stitches are required. He reported a number of cases, one of which he had seen as long as ten years after the operation. In every case the result has been permanent. In conclusion, he said that the hypothetical objections to the operations were two: First, the meibomian glands are destroyed by the incision; second, the removal of the tarsus takes away the vertical support to the margin of the lid. To the first objection, he urged that in cases where this operation is indicated, the function of the meibomian glands have already, in large part, been destroyed. The second objection is not sustained by experience. The margins of the lids are supported by the commissures, and the lateral contraction in the course of the healing has been found sufficient to insure the permanent apposition of the margin of the lid to the surface of the cornea, without exercising any undue pressure; it is obvious that the operation is not indicated in minor cases of displacement. Likewise, it is useless in cicatricial cases of ectropion, but if given a trial in properly selected cases, in cases of extreme non-cicatricial

ectropion of the lower lid, the results will be sufficient to secure its reputation.

Discussion.—Dr. J. P. Worrell, of Terre Haute, Ind.: Dr. Prince's paper called to his mind a case which answers the description of one upon which he operated some two years ago. The patient applied for cataract operation. There was extreme entropion, the result of a neglected purulent ophthalmia. His operation differed from that of Dr. Prince's, in that he did not sacrifice the tarsus. An incision was made parallel to the margin of the lid, at perhaps, five millimeters from the margin, and was followed by another parallel with it, and these two incisions were united at the inferior margin of the tarsus. In this way a wedge-shaped mass was removed, and even without putting in any stitches the lid was held in place with an admirable result. Opening of canaliculus was made preliminary to the operation.

Dr. Prince (closing the discussion) attributes the good results to the cicatrization. The tarsus, when it becomes misshapen and hypertrophied, crowds the lid upwards, and if we remove a portion of it sufficient to have cicatrization lengthwise with the margin of the lid, we effect the same results as we would by excision of a portion of the tarsus. He opens the tear duct at the time of the operation.

Dr. A. C. Corr, of Carlinville, Ill., read a paper on *Choroiditis and Choro-retinitis in Young Persons.* The essayist said that his own observations in practice had not been such as to enable him to agree with the ordinary teaching of the books and didactic instructions on the subject of choroiditis. From this source almost all cases of choroiditis that could not be unquestionably classed as rheumatic, gouty, or traumatic, were at once considered as syphilitic, and this latter is confirmed and a positive diagnosis is made if any improvement or a favorable modification follows the use of mercury and iodide of potassium. It was this "trump" etiological diagnosis that he wished to inveigh against. The author gave a brief history of five cases selected as best illustrating choroiditis with retinal hyperemia as he sees it in private practice in young people, and without any possible syphilitic taint, approximately or remotely, and which he believes originates from excessive functional activity of the eyes.

Discussion. Dr. J. E. Colburn, of Chicago, has found quite a number of cases corresponding in clinical history in appearance to the one described by Dr. Corr. He knows that other gentlemen present have been making similar observations, and would like very much to have them give expression to their thoughts if they are willing to do so at this time.

Dr. C. D. Wescott, of Chicago, has seen quite a number of these cases,

and agrees thoroughly with what Dr. Corr has said, that many of them are not traceable in any way to syphilis. He has absolutely been discouraged in searching for the cause in some cases. In others he has attributed it to taxing the eyes too much when the general condition of the body was not up to par. He has put the eyes absolutely at rest and has done everything which seemed indicated to improve the general tone and purity of the blood. Some of the cases are unquestionably relieved by the proper use of salicylates in connection with absolute rest of the eyes. He has promoted elimination in all instances, as much as possible, while trying to increase the general nutrition and improve the condition of the patient. In some cases he has been obliged to interdict the use of the eyes for months, and even a year, and his ultimate results have been very much like those reported by Dr. Corr, very gratifying.

Dr. J. P. Worrell, of Terre Haute, Ind.: The importance of the choroidal and retinal troubles in school children, who use their eyes a great deal, cannot be overestimated. The frequency with which changes take place in the retina becomes obvious. Every one who has been called upon to study the eyes of children for statistical purposes, and the frequency with which choroidal and retinal changes are found, has been impressed with the importance of the subject, You are doubtless familiar with the results of Dr. Risley's investigations in school children in Philadelphia, which were made with a view of ascertaining what relation there was between myopia and the changes in the eye-ground. Some recent investigations of Dr. Worrell's have substantiated Dr. Risley's statements, and in cases of hypermetropia and astigmatism we find in more than 50 per cent. of the cases some evidences of retinal and choroidal changes. In nearly 50 per cent. of the cases we will see more or less change around the optic disc. In many of them, however, we will find a low degree of vision, and when we come to search for the objective changes, we cannot always find them. Perhaps there is a spotted or granular appearance of the retina, or a slight degree of it, so that we cannot absolutely say it is present. There may be slight scotoma and absolute correction of the refraction; putting the eye under atropia, the use of alteratives, and rest for the eyes constitutes the line of treatment. One of the most gratifying things that comes to us is to have a child under our care that is substantially blind, for all reading purposes, and in the course of three or four weeks to have its acuity of vision come up to normal by judicious treatment.

Dr. J. E. Colburn, of Chicago, has now under observation a young girl whom he has known for fifteen years. He first saw her when she was

a child of three, and again as a child of thirteen, at which time glasses were ordered giving her 20/20 vision. She had eye fatigue and an error of refraction, 1 D. of hypermetropia. She did not like to wear the glasses she had. Her general tone was very much lowered, and a protracted examination at intervals of two or three days showed almost uniformly vision of 10/10. All of the functional activities of the different organs were being interfered with. It was not until the renal activity was increased that any result was reached so far as rest to the eyes and general improvement were concerned. But just as soon as the solids were increased, and the general nutrition and tone of the patient improved, vision came up, too, and is now 20/30.

Dr. Corr (closing the discussion): There seems to be a large per cent. of the cases, in which the cause is not accounted for. There seems to be an inborn condition or weakness of the ocular tissues that makes the eyes of one child weaker than those of another. One child is tough and robust, the other is frail, and this condition of the eyes exists without there being a gouty, rheumatic, or syphilitic history. He believes excessive functional activity of the eye is a means of accounting for the trouble. The treatment he advised and carried out is to have these patients absolutely refrain from active use of the eyes. If this cannot be done, it may be necessary to paralyze the ciliary muscle with atropia, and prescribe correction at the same time for near points, so that the eye cannot be used for accommodation, and have the prism turn in so as to render it unnecessary for the eye to converge. He endeavors to put the eye in such a condition that it can be used.

Continued in June number.

THE ANNUAL MEETING of the Midland Ophthalmological Society convenes at the Coates House, Kansas City, Mo., June 3, 1898. There will be one day session, viz., morning and afternoon, with a social evening. This meeting takes place on the third day of the Military Medical Convention, which is also to be held in Kansas City, Mo., and precedes by three days the American Medical Association, which is to be held at Denver, Col.

The Midland Ophthalmological Society meets regularly once a month for local members, and twice a year for all who may wish to attend. A large number have already promised to be in attendance at the June meeting—Culbertson, of Zanesville; Würdemann, of Milwaukee; Rumbold, of St. Louis, and many others of equal prominence that our space forbids us to mention.

NEWS ITEMS.

Personals and items of interest should be sent to Dr. Frank Allport, 92 State St., Chicago.

EXCHANGES should be sent to Dr. T. A. Woodruff, 1102 Reliance Bldg., Chicago.

DR. E. VON HIPPEL, of Heidelberg, has received the title of extraordinary professor.

DR. R. H. TAYLOR, lecturer of ophthalmology at the Medical School of Liverpool, is dead.

TÜBINGEN.—Dr. Carl Grunert, assistant physician to the eye clinic of the University, is now established as privatdocent.

ST. PETERSBURG.—Prof. Dr. L. Bellarminoff, a. o. professor of ophthalmology, has been appointed ordinary professor to the Military Medical Academy.

BERLIN.—Privatdocent Dr. R. Greef, director of the eye department in the K. Chareté Hospital, has been given the title of extraordinary professor.

TURIN.—Dr. M. Peschel has been appointed a. o. professor of ophthalmology to the University.

DR. FRANK ALLPORT, of Chicago, has accepted a position as professor of ophthalmology in the Chicago Policlinic.

DR. EDWARD NETTLESHIP has given £250 to the Royal London Ophthalmic Hospital, for the purpose of providing apparatus and appliances for the laboratory and museum in the new hospital now being built in the City-Road.—*The Canadian Journal of Medicine and Surgery.*

GOOD EYE-SIGHT is not decreasing among Germans in the British army. On the contrary, according to statistics furnished by Surgeon-

General Seggel, the proportion of recruits endowed with more than the normal power of vision is now 92 per cent, whereas in 1873 it was not more than 56 per cent.—*British Medical Journal.*

Galezowski has devised an "eye thermometer," which he claims is valuable in diagnosing certain eye diseases.

The next meeting of the "German Ophthalmological Society" will convene at Heidelberg, August 4, 1898.

The next meeting of the "Societé Francaise d'Ophtalmologie" will meet May 2d, in Paris. The subject for discussion will be "The Intraocular Hemorrhages of Young People," led by Abadie, of Paris.

The chair of diseases of the eye, ear, and throat at the Medical College of Virginia, made vacant by the death of Prof. Charles M. Shields, will be filled at the annual meeting of the board of visitors of the college, April 21st. All applications, accompanied by credentials, should be forwarded to Christopher Tompkins, M. D., Dean, Richmond, Va.—*New York Medical Record.*

The following officers were chosen at the meeting of the Western Ophthalmologic and Oto-laryngologic Association, Chicago, April 7–8, 1898: President, Dr. J. Elliott Colburn, Chicago; First Vice-President, Dr. Wm. Scheppegrell, New Orleans; Second Vice-President, Dr. Casey A. Wood, Chicago; Third Vice-President, Dr. Harold Gifford, Omaha; Secretary, Dr. F. M. Rumbold, St. Louis; Treasurer, Dr. W. L. Dayton, Lincoln, Neb. Committees—Program: F. M. Rumbold, chairman; H. V. Würdemann, Harold Gifford. Publication: Adolf Alt, chairman; M. A. Goldstein, T. A. Woodruff. Membership: Casey A. Wood, chairman; George Knapp, E. C. Ellett. Arrangement: Wm. Scheppegrell. The next meeting will be held in New Orleans.

It affords the Record much pleasure to announce that the chair of ophthalmology and otology in the Rush Medical College, recently vacated by the respected and revered Dr. E. L. Holmes, will be filled by Dr. F. C. Hotz, of Chicago.

Dr. Hotz's name is too well known to require any introductory or eulogistic remarks from The Ophthalmic Record. His reputation extends wherever ophthalmology is known, and in inviting him to occupy this chair Rush Medical College has honored itself.

The debt of this college having been canceled, and its adoption into the Chicago University having been consummated, the chair of ophthalmology and otology in this institution should be one of the most important of its kind in the United States, and the RECORD is confident that with Dr. Hotz as its occupant, this chair will fulfill its destiny.

THE *Advertising Ophthalmic* Specialist.—We have received a circular letter emanating from the "London Ophthalmic Institute," accompanied by a little work by "Our Consulting Specialist, one of the leading refractionists of the day." The refractionist's name is D. Shepperd, and there is one statement in his book with which we are in most hearty accord, viz., where he says, "One of the greatest curses existing in Great Britain to-day, is the trade carried on by quack opticians." Mr. Shepperd, however, as we learn from the Secretary's letter, "In order to ascertain the existence of astigmatism now so prevalent————will specially diagnose each case separately." This is indeed a favor!

Mr. Shepperd's views on cataract are that "it is frequently caused by the want of using glasses in proper time, from using improper glasses, or from the use of common lenses." This pathology is quite new to us. We should like to know how many cases of commencing glaucoma Mr. Shepperd has "diagnosed" as commencing cataract.—*London Lancet.*

NOTES from the "Ophthalmological, Otological, Laryngological and Rhinological Association," which met in Chicago, April 7th and 8th:

A long-suffering profession will be gratified to learn that the name of this association has been changed and somewhat mitigated. It is now called the "Western Ophthalmologic and Oto-Laryngologic Association." We sincerely hope that at the next meeting of this association the name may be still further shortened, in order that the every-day practitioner may pronounce it without producing a dislocation of his lower maxilla.

The meeting in Chicago was the most successful one in the history of the association, and was inspiring, not only from the many really good papers which were presented, but on account of the presence of many specialists of national, and even international reputation.

Dr. Henrotin, President of the Chicago Medical Society, delivered a very able Address of Welcome, and Dr. Fryer, of Kansas City, presided with his usual grace and ability. Dr. Hugh T. Patrick, of Chicago, delivered an address by invitation, which was cordially received by the society. The most important event of the meeting was doubtless the address of Dr. Hermann Knapp, of New York City, on "The Radical Tympano-Mastoid Operation." Dr. Knapp's address was enthusiastically

received, and it is certainly to be regretted that being an address it could not be discussed.

Among those present were, Alt, of St. Louis; Gifford, of Omaha; Goldstein, of St. Louis; Scheppergrell, of New Orleans; Reynolds, of Louisville; Barck, of St. Louis; Prince, of Springfield.

At a recent meeting of the Bath and Bristol branch of the *British Medical Association*, the President, Mr. F. Richardson Cross, showed by diagrams and cases the results of some operations for removal of the lens in high degrees of myopia. He reports good results, and believes in the operation as having passed the experimental stage, and as standing now on a solid footing. His views were concurred in by Mr. W. M. Beaumont, Mr. C. H. Walker, Dr. C. Hailes, and others.

Dr. Colburn, of Chicago, was elected President. As he showed such ability as chairman of the Committee on Arrangements, we predict that the society will thrive under his leadership.

About one hundred physicians attended the meeting. The society received about twenty-five new members.

The next meeting of the "Association" will be in New Orleans, and as the date of meeting is just prior to the Mardi Gras, those attending the meeting will be enabled to stay over for a few days and enjoy the gaieties of the southern capital.

The Santa Fe Route to Denver is the scenic line. It passes through Colorado Springs, affording a magnificent view of Pike's Peak, as well as a view by daylight of the Rocky Mountain range for a distance of more than one hundred miles. The service is very comfortable.

AMERICAN MEDICAL ASSOCIATION MEETING.

For the convenience of those wishing to attend the meeting of the American Medical Association, June 7–10, at Denver, The Ophthalmic Record has arranged for a special through train via the Chicago, Union Pacific and Northwestern line, leaving Chicago, Sunday, June 5th, at 6:30 p. m., arriving in Omaha Monday morning, where a stop will be made all day, in order that the party may visit the trans-Mississippi Exposition. The train will leave Omaha Monday evening, and arrive in Denver about 8 a. m. Tuesday morning, in ample time for the opening session of the American Medical Association. A single fare, plus two dollars, has been granted for the round trip, allowing one month in Colorado. For further particulars and reservations apply to Editorial Secretary Ophthalmic Record, 1102 Reliance Building, Chicago.

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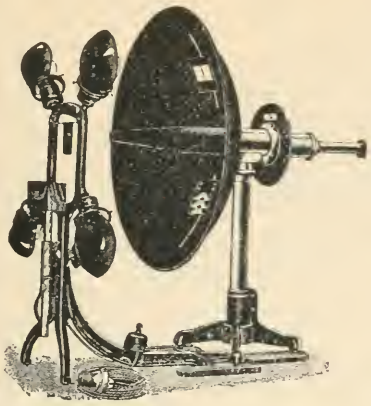

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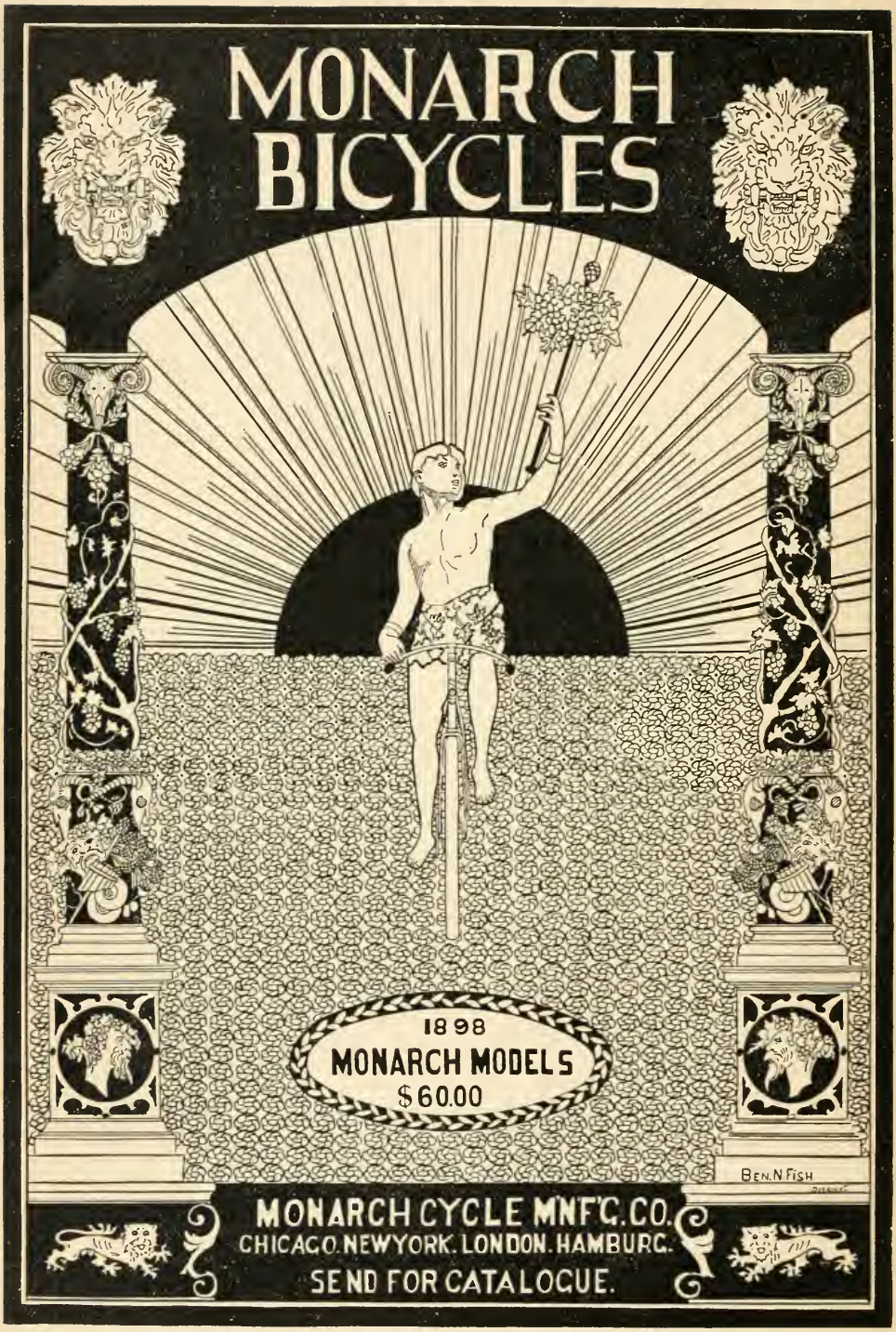
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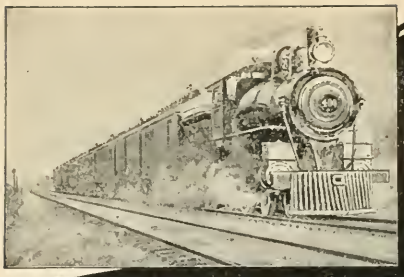

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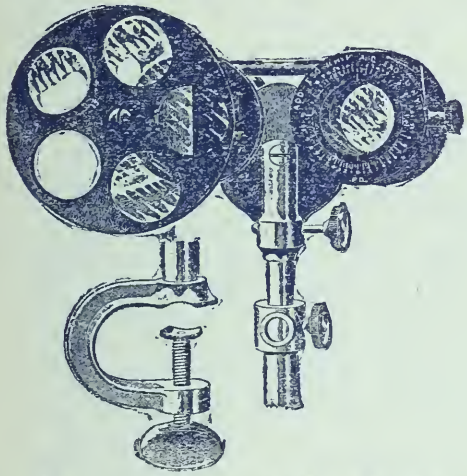

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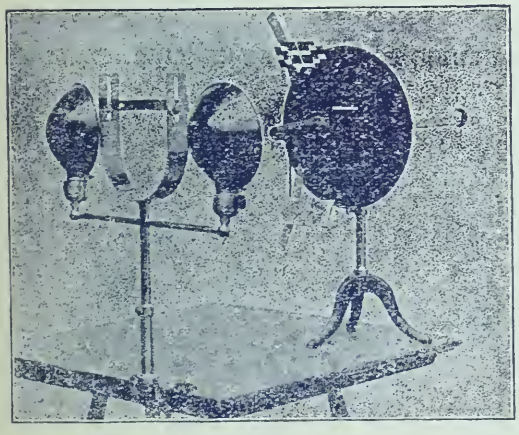

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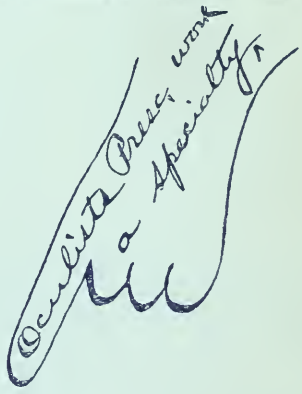

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